WHITE PAPER

Facial Injectables: Market Developments and Intellectual Property Landscape

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1 Executive Summary

The intention of this white paper is to provide an overview of the market developments across the aesthetic injectables commercial and patent landscapes. The information in this report does not constitute legal advice and should not be interpreted as such.

1.1 Background

This white paper by Wellspring focuses on the facial injectables industry, which has evolved from niche procedures into in-demand and widely accepted tools in modern aesthetic and preventative medicine.

Over the past two decades facial injectables have evolved from simple 'wrinkle-fixers' to highly customisable tools for both aesthetic enhancement and facial aging prevention, guided by improved safety, technique, and a greater emphasis on 'natural-looking' beauty.

This white paper aims to give an overview of the facial injectables industry through a combination of market research and patent landscaping. The paper also incorporates details of the factors affecting the market, key organisations, licensing and collaborations.

1.2 Market Overview

The global facial aesthetic injectables market was valued at over $12 billion in 2024 and is projected to reach nearly $40 billion by 2040, growing at a compound annual growth rate (CAGR) of 7.4%. North America leads the market, contributing 40% of global revenues, supported by high procedure volumes, established clinical infrastructure, and sales by dominant firms such as **Abbvie** (US) and **Galderma** (Switzerland). Europe follows, with 28% market share, underpinned by strong consumer acceptance across key Western European countries.

Asia-Pacific represents the fastest-growing region, forecast to grow at double-digit CAGR, driven by an expanding middle class, evolving cultural attitudes, and improved clinical access, particularly in China and Japan.

Product segmentation splits primarily between botulinum toxins (e.g., Botox®, Dysport®) and dermal fillers (e.g., Juvederm®, Sculptra®, Radiesse®). Botulinum toxin injections accounted for 52% of procedures in 2024 (7.9 million), while hyaluronic acid (HA) fillers represented 41% and are the fastest-growing segment, rising 56.4% since 2020. Emerging products like Poly-L-lactic Acid (PLLA) and Calcium Hydroxylapatite (CaHA) are also expanding rapidly, with the number of PLLA procedures growing by over 430% between 2020 and 2024.

This sustained growth is underpinned by evolving consumer demand for minimally invasive, high-efficacy aesthetic solutions across diverse global markets.

1.3 Key Players

The aesthetic injectables industry is dominated by a group of well-established global players, with a growing number of emerging companies entering the market. Established players include **AbbVie** (US), **Merz Pharma** (Germany), and **Galderma**, and emerging players include **Croma-Pharma** (Austria), **Neauvia** (Switzerland) and **Prollenium Medical Technologies** (Canada).

Biostimulatory and regenerative technologies are emerging as major growth drivers, with companies like **Prollenium** (Canada) and **Bloomage Biotech** (China) exploring polydeoxyribonucleotide (PDRN) injectables, and **Sinclair** (UK) expanding its portfolio with long-lasting fillers and biostimulatory implants. There is also a clear trend toward multi-functional and hybrid injectables, such as **Allergan's** HArmonyCa, **Galderma's** Restylane® Contour and Sculptra®, and **Spiderwort Biotechnologies'** CelluJuve®, which combine volumisation with skin quality improvement. Ready-to-use neuromodulators, such as **Galderma's** ALLUZIENCE® and the pipeline u, highlight innovation focused on ease of use and faster onset, responding to clinician demand for efficiency.

Strategic partnerships and acquisitions are accelerating, particularly among established players looking to expand capabilities or enter new regions. This includes **L'Oréal**'s (France) stake in Galderma, **Revance's** (US) proposed acquisition by **Teoxane** (Switzerland), and **Sisram's** (Israel) partnership with **Prollenium**. The industry also shows a strong regional diversification trend, with companies like **Medy-Tox** (South Korea) and **Sinclair** (UK) growing their presence in Europe and China, and **Croma** (Austria) partnering to penetrate the Latin American market. At the same time, legal and competitive tensions are increasing, as seen in **Allergan's** lawsuit against **Revance** over trade secrets and **Aquavit Pharmaceuticals** (US) $10 million award in damages over counterfeit goods, signalling rising competition in botulinum and filler segments.

Innovation pipelines across the board reflect a focus on targeted indications (e.g., temple augmentation, under-eye hollowing, and skin texture) and customised product lines, as with **Merz's** Belotero® and **Revance's** RHA® collections. Lastly, there is increasing attention on cross-technology synergy, with firms like **Neauvia** promoting integrated approaches combining fillers with energy-based devices or skincare. These trends collectively point to an industry evolving rapidly through scientific innovation, global market penetration, and differentiated user-focused solutions.

Alongside commercial innovation, academic institutions, hospitals, and research organisations play a critical role in advancing the facial injectables field. Wellspring's *Scout* platform identified over 1,400 relevant publications between 2020 and 2025. Research leadership is geographically diverse: Asian centres (e.g., **Yonsei University, Peking Union Medical College, Chinese Academy of Sciences**) tend to focus on anatomical mapping and novel biomaterials; North American institutions (e.g., **University of California System, Mayo Clinic, Harvard University**) lead on clinical outcomes, safety protocols, and emergency management; and European leaders (e.g**., LMU Munich, Erasmus MC, University of Verona**) set global benchmarks in complication management algorithms, hyaluronidase protocols, rheology, and regulatory frameworks. Together, these ecosystems underpin regulatory approvals, inform best practice, and shape the evidence base for next-generation injectable products.

1.4 Product Overview & Clinical Applications

Facial injectable treatments encompass a diverse set of products used for aesthetic rejuvenation and contouring. These products are categorised by composition and mechanism of action, ranging from muscle-paralysing neuromodulators to dermal fillers with varying permanence, volume, and regenerative effects.

Botulinum Toxin (e.g., Botox®, Dysport®) is the most widely-known injectable. It temporarily relaxes facial muscles by blocking nerve signals, smoothing dynamic wrinkles such as frown lines and 'crow's feet'. Its effects typically last 3-4 months. A new formulation, Daxxify®, claims extended duration of up to 6 months.

Collagen fillers, once the standard, have largely fallen out of favour due to short duration and allergenic concerns. Products like CosmoDerm® have been discontinued, while Bellafill®, a PMMA-collagen hybrid, is the main collagen-based filler in use today.

Hyaluronic Acid (HA) fillers are now the dominant dermal fillers due to their versatility, reversibility, and safety. Brands such as Juvéderm®, Restylane®, and Belotero® offer formulations tailored to different facial areas. HA is naturally occurring and holds water, making it suitable for wrinkle filling, volume restoration, lip enhancement, and skin hydration. Results typically last 6-18 months.

Calcium Hydroxylapatite (CaHA) fillers, such as Radiesse®, are thicker and more durable. They provide structural lift and stimulate collagen, with effects claimed to last up to 18 months.

Poly-L-lactic Acid (PLLA), marketed as Sculptra®, stimulates collagen production over time. It is used for facial volume loss and gradual rejuvenation, particularly in consumers seeking subtle, progressive results.

Polymethyl-methacrylate (PMMA) microspheres, as utilised in Bellafill®, act as a long-lasting dermal scaffold. Following injection, the PMMA particles remains in the skin, where they stimulate collagen production and contribute to sustained tissue support. Evidence from a 5-year post-approval study, found the majority of Bellafill® users reported outcomes ranging from "satisfied" to "very satisfied" with the results.

Autologous fat injections use the recipient's own tissue for long-lasting, 'natural' volume restoration. Though technically more invasive, it offers the potential for permanent results.

Emerging products include polycaprolactone fillers (Ellansé®), injectable "skin boosters", mesotherapy blends, PRP, and autologous fibroblast therapies, reflecting growing interest in regenerative and hybrid injectables. While some are in early adoption, they highlight ongoing innovation aimed at longer-lasting, multi-benefit outcomes in facial aesthetics.

1.5 Deals

The aesthetic injectables market is experiencing dynamic transformation, driven by surging consumer demand, recurring high-margin revenues, and significant private equity interest targeting consolidation in a fragmented industry.

Mergers and acquisitions (M&A) have intensified globally, with Europe leading in total deal value despite fewer transactions than North America, indicating a trend toward high-value strategic acquisitions. Conversely, Asia-Pacific and Latin America saw steep declines in deal volume, suggesting shifting investor focus away from emerging and higher-risk markets. Hence, in Asia, where the current environment is capital-constrained and risk-adverse, the facial-injectables market is expanding from the bottom up, driven by consumer demand, tourism, and cultural shifts.

Acquisitions dominated the total deal value ($89.3 billion), while equity and debt offerings were also prominent, though venture financing and partnerships saw a 100% drop year-on-year, which may be a sign of market maturation or investor caution.

Key deals such as **AbbVie's** $85.7 billion acquisition of **Allergan** and **Crown Laboratories**' $924 million acquisition of **Revance** underscore a growing appetite for neurotoxin and dermal filler innovation. In particular, **AbbVie's** acquisition may also set the tone for future consolidation in the space, as large pharmaceutical players began to view aesthetics as a high-margin, cash-pay growth area. Further, the entry of traditional beauty giants like **L'Oréal** into clinical aesthetics highlights a trend toward convergence between consumer and medical-grade aesthetics, blurring the lines between the two sectors.

Despite a reduction in private equity volumes, notable deals like **Teoxane's** bid for **Revance** suggest ongoing strategic realignments and competitive jockeying. Capital markets remain active at both early and late stages, with venture funding focused on biomaterials and regenerative technologies.

Overall, the injectables space is evolving into a more consolidated, globalised, and innovation-driven market with clear segmentation between established players and emerging disruptors.

1.6 Market Drivers & Trends

The facial injectables market is expanding due to a convergence of demographic, social, and technological factors. Key trends include the widespread normalisation of injectables across age groups and genders, fuelled by the influence of social media and online platforms. "Prejuvenation" among younger consumers, increased male uptake, and strong engagement on social media have significantly broadened the customer base.

Simultaneously, the rapid growth of aesthetic clinics, med-spas, and non-traditional providers has improved accessibility. This decentralisation of injectable services has lowered barriers to entry and enabled broader adoption, particularly in emerging markets. Consumer demand is also supported by product diversification, with injectables now used not only for facial wrinkles but also for jawline contouring, hand rejuvenation, and off-label body applications.

Innovation remains a key growth driver. New, longer-lasting products, such as Daxxify® and collagen-stimulating fillers like Ellansé®, offer enhanced convenience and outcomes. Technical advances (e.g.

microcannulas, combination therapies, and more refined techniques) have improved results, safety, and customer satisfaction.

However, several barriers temper this growth. Regulatory restrictions, safety concerns, and the rise of alternative treatments (e.g. thread lifts, energy-based devices, cosmeceuticals) present challenges. The temporary nature of injectables also deters some consumers who prefer permanent solutions.

Despite these constraints, the sector is driven forward by global ageing, rising disposable incomes, strong consumer preference for minimally invasive procedures, and continuous clinical improvements. The overall market outlook remains highly positive, supported by both demand-side expansion and innovation on the supply side.

1.7 Regulatory Landscape

The global regulatory landscape for aesthetic injectables is trending toward stricter oversight, with many countries reclassifying dermal fillers as Class III high-risk medical devices due to their long-term presence and absorbability. Botox® is uniformly treated as a medicinal product, requiring stringent approval for safety and efficacy, though administration rules differ between regions. Countries and regions like the US, Europe, UK, and China have established clear pathways for injectable approvals, while others, notably South Korea, lack a dedicated regulatory framework, creating oversight gaps.

There is a growing emphasis on practitioner licensing, accredited training, and advertising restrictions, particularly in the UK, where recent reforms aim to combat unregulated treatment and improve patient safety.

Globally, aesthetic injectables remain in a regulatory grey zone, often straddling the line between cosmetic and therapeutic products. This has led to inconsistent classifications and approval routes, but also a shared trend toward harmonising standards and improving consumer outcomes. Overall, the industry is undergoing a shift toward greater accountability, safety, and regulatory clarity.

1.8 Patent Analysis

The patent landscape for facial injectables has grown significantly over the past 20 years, with filings increasing twelve-fold from 2005 to a peak in 2023, reflecting strong innovation and commercial interest. This growth aligns with the global rise in medical aesthetics, and notably, the COVID-19 pandemic had little negative impact on patenting activity. The US leads the field, accounting for 40% of priority filings and 30% of protection jurisdictions, followed by China, South Korea, and Europe. A high proportion of granted patents (44%) versus pending (23%) and dead (33%) patent families indicate a mature and commercially viable market.

The US, China, and South Korea also have the highest number of active patent families, although China has more revoked patents, with the majority of Chinese patent families from commercial players (41 of the top 50 assignees in China), likely due to higher cosmetic patent scrutiny in a regulated IP environment. The top 10 assignees, including **AbbVie**, **Merz**, and **Galderma**, hold just 12% of all patent families, indicating a fragmented landscape with opportunities for new entrants.

Patent filings are heavily concentrated around HA, which has seen a major surge since 2017 due to its perceived favourable properties and advanced formulations. Collagen patent families have also

increased significantly since 2021, likely driven by innovative advances that are providing alternative, next-generation solutions in the face of the decline in consumer interest of collagen fillers. Other more niche materials like chitosan and polyethylene glycol show steady but less dramatic growth.

In particular, HA is the most influential area with over 10,000 non-self forward citations, far exceeding collagen and chitosan, and underscoring its foundational role in aesthetic injectables innovation. Across HA, collagen, and chitosan technologies, a clear trend emerges around novel injectable bioactive and macromolecular materials made from these biomaterials, particularly polysaccharide-based hydrogels.

Overall, the field remains dynamic, with ongoing innovation in both materials and delivery systems driving future market potential.

Contents

2 Introduction

This white paper by Wellspring focuses on the facial injectables industry, which has evolved from niche procedures into in-demand and widely accepted tools in modern aesthetic and preventative medicine. Following its FDA cosmetic approval in 2002, Botox® quickly became the go-to treatment for smoothing forehead lines and glabellar wrinkles.[1] Around the same time, hyaluronic acid (HA) fillers gained popularity, primarily used to treat nasolabial folds and enhance lip volume.[2]

Between 2010 and 2015, injectable technology advanced and techniques became more refined; practitioners moved beyond wrinkle-smoothing, using fillers to contour cheeks, reshape noses and define jawlines. Combination therapies, pairing neuromodulators with fillers, began to emerge as the concept of full-face rejuvenation took hold. Consumer demographics also expanded, with men and younger women increasingly seeking preventative treatments.

However, from 2015 to 2020, the emphasis shifted toward personalisation and natural-looking results. Innovations such as biostimulatory fillers (e.g., Sculptra® and Radiesse®) gained traction for their ability to stimulate collagen and provide longer-lasting results.[3] "Baby Botox" (low-dose botulinum toxin) became a popular preventative measure among millennials, while the rise of social media and influencer culture further normalised injectables as routine beauty maintenance.[4]

The period from 2020 to present has seen a notable increase in the use of injectables to address age-related volume loss, such as that caused by rapid weight loss as well as a surge in men seeking aesthetic treatments.[5] Technology has also played a major role, with AI-driven consultations, 3D-facial imaging, and augmented reality tools for improving assessment and outcomes.[6] Further, the dissolving of excessive filler, especially among influencers and celebrities has highlighted a growing preference for restraint and reversibility.

Overall, facial injectables over the past two decades have evolved from simple wrinkle-fixers to highly customisable tools for both aesthetic enhancement and facial aging prevention, guided by improved safety, artistic technique, and a greater emphasis on 'natural-looking' beauty.

This white paper aims to give an overview of the facial injectables industry through a combination of market research and patent landscaping. The paper also incorporates details of the key organisations, factors affecting the market, licensing and collaborations.

[1] https://iapam.com/botox-library/timeline-of-botox-popularity-in-the-us#:~:text=Botox%C2%AE%20gained%20its%20initial%20FDA%20approval%20for%20medical,cosmetic%20injectable%20in%20the%20US%20for%20two%20decades
[2] https://draesthetica.co.uk/ask-aesthetica/the-history-and-evolution-of-hyaluronic-acid/
[3] www.true-aesthetic.com/post/the-rise-of-biostimulators-a-new-era-in-aesthetic-enhancement
[4] www.independent.co.uk/life-style/baby-botox-preventative-twenties-thirties-wrinkles-fine-lines-b2546066.html
[5] www.hamiltonfraser.co.uk/content-hub/mens-aesthetics-breaking-stereotypes
[6] https://healthindustrytrends.com/the-impact-of-technology-on-the-future-of-cosmetic-surgery/

3 Market Overview

3.1 Market Size

The global market for facial aesthetic injectables is sizable and on a strong growth trajectory. Estimates for the current market size vary slightly by source but place the market size at approximately $12.68 billion in 2024 and project to grow to just under $40 billion by 2040 at a compound annual growth rate (CAGR) of 7.4%.[7]

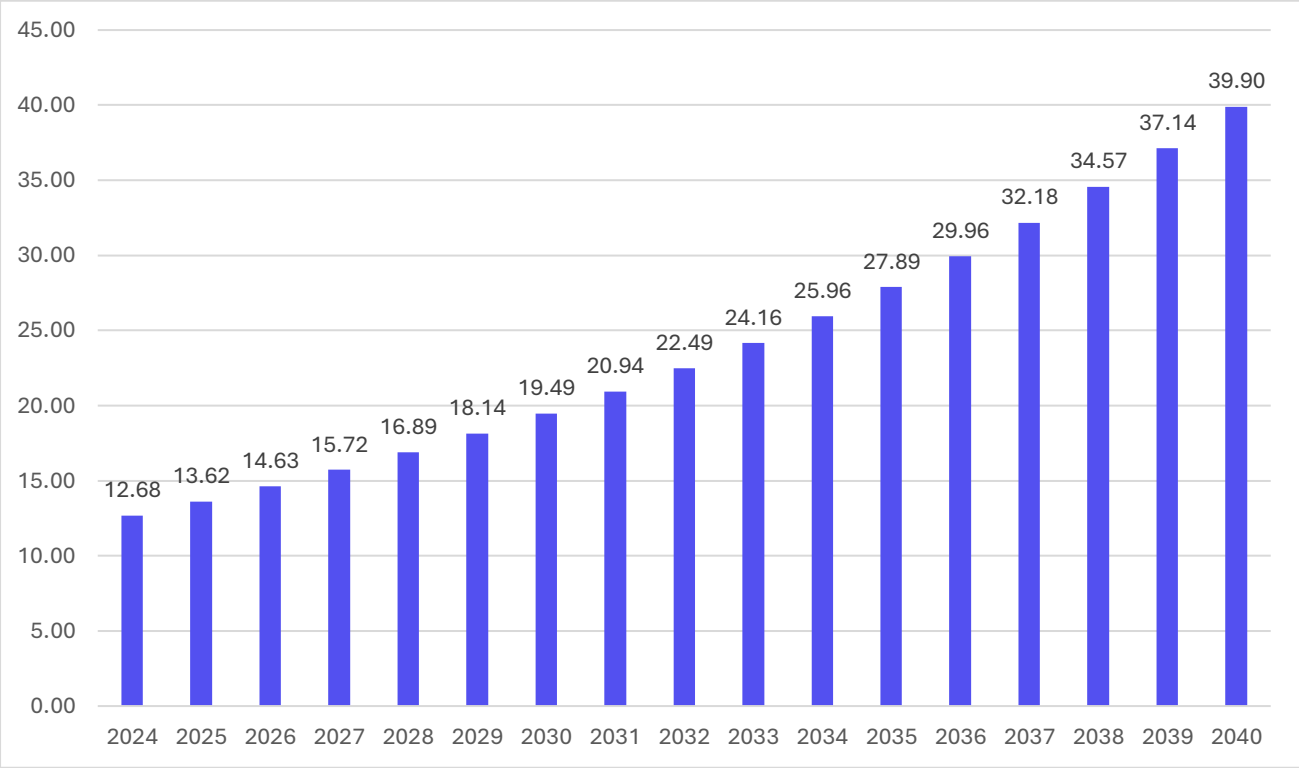

Figure 1. Facial Injectable Market Size, in $ billion. 2024-2040. (Sources: Precedence Research and Grand View Research)

3.2 Geographic Regions

Geographically, the market is led by North America and Europe, with Asia-Pacific rapidly emerging as the fastest-growing region. North America is the single largest regional market, supported by an affluent and aesthetically aware population, a high volume of procedures, and an extensive network of cosmetic clinics.

[7] Precedence Research. (2024) *Facial Injectable Market Size, Share, and Trends 2025 to 2034*

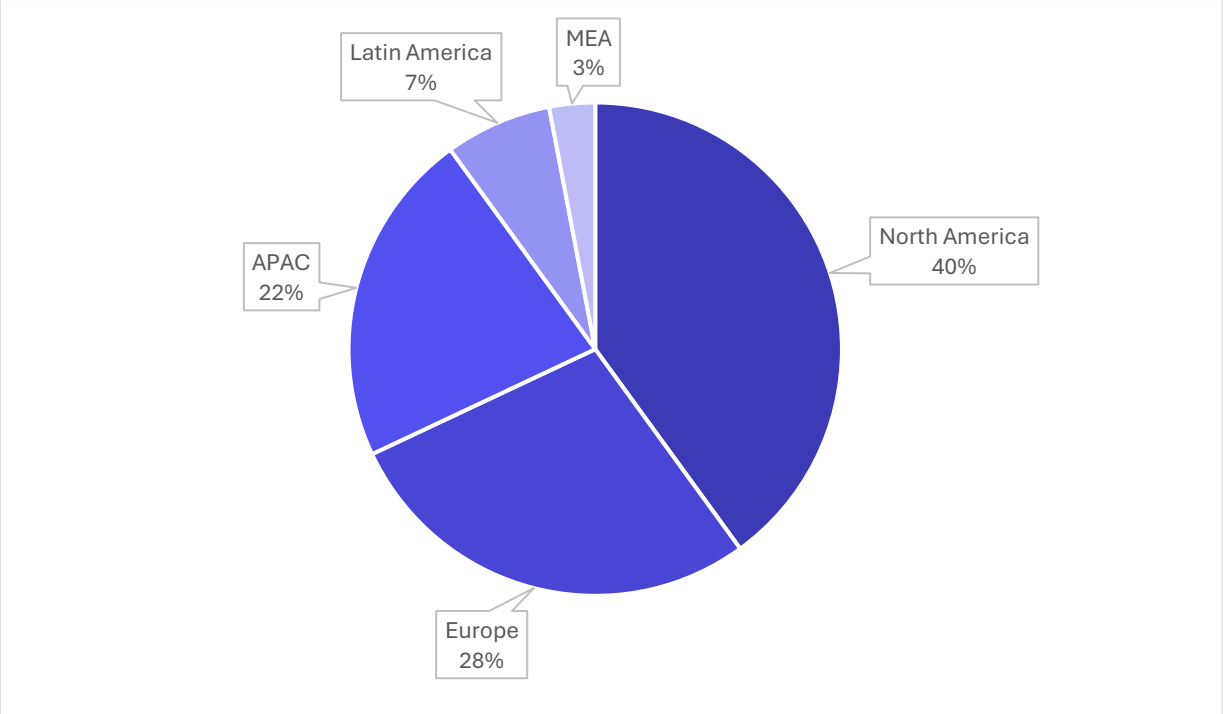

Figure 2. Facial Injectable Market Share, by region, 2024 (%). (Source: Precedence Research)

In 2024, **North America** comprised 40% of global facial injectable revenues, with a revenue of $4.8 billion.[8] The United States is the primary driver, being the world's largest aesthetic injectables market by country. According to figures from the International Society of Aesthetic Plastic Surgery, Americans underwent around 4.2 million non-surgical cosmetic procedures in 2024 alone, and industry leaders like **AbbVie** (**Allergan Aesthetics**) and **Galderma** are headquartered or heavily active there.

Europe is the second-largest region by revenue. In 2023 Europe held a significant share, at 28% of the global market, reflecting widespread acceptance of Botox® and filler treatments across Western Europe. High per-capita spending on cosmetic procedures, an entrenched culture of aesthetic medicine (especially in countries like Germany, France, Italy, and the UK), and the availability of many products and clinics underpin Europe's strong market position

Asia-Pacific (APAC), while currently smaller in market share, is the fastest-growing region and a focal point of industry expansion. APAC's facial injectables market is forecast to grow at the highest CAGR through 2032.[9] Key growth drivers for this region include improving healthcare and aesthetic clinic infrastructure in Asian countries, a large and growing middle-class with rising disposable incomes, and increasing beauty consciousness among consumers. China has seen surging demand for injectable treatments among younger consumers and professionals, aided by improved access to trained providers and a cultural shift normalising cosmetic enhancements, and is expected to grow at

[8] Grand View Research. (2024) *North America Facial Injectable Market Size & Outlook*
[9] Fortune Business Insights. (2025) Facial *Injectables Market Size, Share & Industry Analysis By Type, By Application, By End-user, and Regional Forecast 2024-2032*

a CAGR of 20.8% from 2025 to 2030.[10] Japan's sizeable elderly population and emphasis on anti-ageing treatments also contribute substantially to APAC demand.

By contrast, **Latin America** and the **Middle East & Africa (MEA)** currently account for a smaller portion of global revenues (collectively under 10% in 2024). However, even in these regions interest in aesthetic procedures is growing, particularly in urban centres and affluent submarkets. Countries like Brazil and the UAE have active aesthetic medicine communities and could see faster uptake moving forward.

3.3 Market Segmentation by Product Type

In terms of market segmentation, facial injectables can be broadly divided into **neuromodulators** (botulinum toxin) and **dermal fillers** (of various materials such as HA, collagen, CaHA, PLLA, PMMA, etc., as well as autologous fat). These categories together cater to overlapping aesthetic indications, toxins primarily treat dynamic wrinkles by relaxing facial muscles, whereas fillers address static lines, volume loss, and contour deficiencies by adding substance under the skin.

Product Type	Function	Example Brands
Botulinum Toxin	Muscle relaxant for dynamic wrinkles	Botox®, Dysport®, Xeomin®
Hyaluronic Acid Fillers	Volume restoration and contouring	Juvederm®, Restylane®
Calcium Hydroxylapatite (CaHA)	Deep structural filling and stimulation of collagen production	Radiesse®
Poly-L-lactic Acid (PLLA)	Collagen stimulation	Sculptra®
Poly(methyl methacrylate) (PMMA) Microspheres	Permanent structural support	Bellafill®
Autologous Fat Injection	Natural volume replacement	—

Table 1. Overview of Key Facial Injectable Product Types, Functions, and Brands.

Both segments are large, however in 2024 the botulinum toxin type A segment held a leading position in the global facial injectables market, accounting for an estimated 53.3% share of total revenue. Botulinum toxin type A, a purified neurotoxin derived from *Clostridium botulinum*, acts by blocking acetylcholine release at the neuromuscular junctions, producing temporary muscle relaxation. Its well-established efficacy and safety profile have contributed to the maturity of the product category and the continued rise in global procedure volume. Botulinum toxin type B is also approved for medical use, but its applications in aesthetics are limited compared to type A, which dominates the market. According to the international Society of Aesthetic Plastic Surgery close to 7.9 million botulinum toxin type A injections were administered in 2024, underscoring the widespread adoption of neuromodulators for non-surgical facial rejuvenation.

[10] Grand View Research. (2024) *China Facial Injectable Market Size & Outlook 2024-2030*

The hyaluronic acid (HA) segment is currently the second largest segment with approximately 6.3 million HA injections being administered in 2024; this segment is projected to exhibit the fastest growth rate among all injectable categories over the coming years. This expansion is being driven by regulatory milestones, greater geographic market penetration, and advances in treatment protocols.[11]

Non-Surgical Procedure	Total Procedures in 2024	Segment Percentage	Total Procedures in 2023	Total Procedures in 2020	% Change 2024 vs. 2023	% Change 2024 vs. 2020
Botulinum Toxin	7,887,955	52%	9,549,245	6,213,859	-17.4%	26.9%
Hyaluronic Acid	6,338,184	41%	6,025,911	4,053,016	5.2%	56.4%
Poly-L-Lactic Acid	642,566	4%	N/A	121,087	N/A	430.7%
Calcium Hydroxylapatite	418,173	3%	367,646	222,785	13.7%	87.7%

Table 2. Volume and Growth of Facial Injectable Procedures by Product Type (2020–2024). (Source: International Society of Aesthetic Plastic Surgery)

[11] Grand View Research. (2024) *Facial Injectable Market Size, Share & Trends Analysis Report By Product (Collagen & PMMA Microspheres, HA), By Application (Facial Line Correction, Lip Augmentation), By End-use, By Region, and Segment Forecasts, 2025-2030*

4 Key Players

The key players in the aesthetic injectables industry were identified using information from subscription databases, press articles, internet-based searching and academic literature.

4.1 Established Players

4.1.1 Allergan Aesthetics (AbbVie)

Allergan Aesthetics is an AbbVie company, based in Ireland, that develops, manufactures, and markets a portfolio of leading aesthetics brands and products, that includes facial injectables, body contouring, plastics, skin care, and more.[12] AbbVie is a global biopharmaceutical company, based in the US, focused on creating medicines and solutions to address complex health issues and enhance lives through the following core therapeutic areas: immunology, oncology, neuroscience, eye care, aesthetics, and other areas of unmet need.[13]

Financial Updates

2025

- The 2025 second quarter net revenues from AbbVie's Aesthetics Portfolio were $1.279 billion, an increase of 2.4% on a report basis.
- AbbVie's global Botox® cosmetic net revenues were $692 million
- AbbVie's global JUVÉDERM® net revenues were $260 million
- The 2025 first quarter net revenues from AbbVie's Aesthetics Portfolio were $1.102 billion, a decrease of 11.7% on a reported basis.
- AbbVie's global Botox® cosmetic net revenues were $556 million
- AbbVie's global JUVÉDERM® net revenues were $231 million

2024

- The 2024 full year global net revenues from AbbVie's Aesthetics Portfolio were $5.176 billion, a decrease of 2.2% on a reported basis.[14]
- AbbVie's global Botox® cosmetic net revenues were $2.720 billion
- AbbVie's global JUVÉDERM® net revenues were $1.177 billion.

2021-2025 Corporate Transactions

- In December 2021, Allergan completed its acquisition of the medical device company Soliton, the addition of Solution and its technology complements Allergan's portfolio of non-invasive body contouring treatments to include a treatment for the appearance of cellulite.[15]

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[12] www.allerganaesthetics.com/
[13] www.abbvie.com
[14] https://investors.abbvie.com/news-releases/news-release-details/abbvie-reports-full-year-and-fourth-quarter-2024-financial
[15] https://news.abbvie.com/2021-12-16-Allergan-Aesthetics-Completes-Acquisition-of-Soliton

- In February 2021, Allergan entered into a co-development agreement with CollPlant Biotechnologies for dermal and soft tissue products, wherein CollPlant granted Allergan global exclusivity to use its plant-derived recombinant human collagen in combination with Allergan's proprietary technologies, for the development and commercialisation of dermal and soft tissue fillers. [16]

Recent Litigious Actions

- In July 2025, AbbVie and its subsidiary Allergan won a $56 million royalty award from Revance after a jury found that Revance's anti-wrinkle medication Daxxify® infringed patents covering Allergan's rival drug Botox®.[17]

2021 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In June 2025, the US FDA accepted for review the supplemental premarket approval application for SKINVIVE by JUVÉDERM® (HA dermal filler) to reduce neck lines for the improvement of neck appearance.[18]
- In April 2025, AbbVie submitted a Biologics License Application to the US FDA for trenibotulinumtoxinE for the treatment of moderate to severe glabellar lines.[19]
- In October 2024, the US FDA approved BOTOX® Cosmetic for temporary improvement in the appearance of moderate to severe vertical bands connecting the jaw and neck in adults.[20]
- In September 2024, BOTOX® Cosmetic was launched for the treatment of masseter muscle prominence in China.[21]
- In March 2024, the US FDA approved JUVÉDERM® VOLUMA® XC (HA dermal filler) for injection in the temple region to improve moderate to severe temple hollowing in adults over the age of 21.[22]
- In January 2023, Allergan launched JUVÉDERM® VOLUX™ XC (a HA filler) for consumers over the age of 21 with moderate to severe loss of jawline definition in the US.[23]
- In August 2022, the US FDA approved JUVÉDERM® VOLUX™ XC for the improvement of jawline definition in adults over the age of 21 with moderate to severe loss of jawline definition.[24]
- In February 2022, the US FDA approved JUVÉDERM® VOLBELLA® XC for improvement of infraorbital hollows in adults over the age of 21.[25]

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[16] https://ir.collplant.com/news-events/press-releases/detail/99/collplant-announces-development-and-global
[17] www.reuters.com/legal/litigation/abbvie-unit-wins-56-mln-us-patent-trial-against-botox-rival-2025-07-21/
[18] https://news.allerganaesthetics.com/News/detail?releasePath=%2F2025%2F6%2Fpr-id-123593
[19] https://news.allerganaesthetics.com/News/detail?releasePath=%2F2025%2F4%2Fpr-id-123576
[20] https://news.allerganaesthetics.com/News/detail?releasePath=%2F2024%2F10%2Fpr-id-123532
[21] https://news.allerganaesthetics.com/News/detail?releasePath=%2F2024%2F9%2Fpr-id-123522
[22] https://news.allerganaesthetics.com/News/detail?releasePath=%2F2024%2F3%2Fpr-id-123470
[23] https://news.abbvie.com/2023-01-18-JUVEDERM-R-VOLUX-TM-XC-FOR-IMPROVEMENT-OF-JAWLINE-DEFINITION-NOW-AVAILABLE-NATIONWIDE
[24] https://news.abbvie.com/2022-08-03-FDA-Approves-JUVEDERM-R-VOLUX-TM-XC-for-Improvement-of-Jawline-Definition
[25] https://news.abbvie.com/2022-02-08-FDA-Approves-JUVEDERM-R-VOLBELLA-R-XC-For-Undereye-Hollows

Injectable Aesthetics Product Portfolio

Allergan's facial injectables product portfolio is shown in the below table.

Product	About	Potential Indication	Region	Phase	Status
BoNTE	A toxin being investigated for the treatment of glabellar lines.	Glabellar Lines	N/A	3	Not approved
BOTOX®	A neurotoxin approved for the temporary improvement in the appearance of moderate to severe forehead lines, lateral canthal lines, and glabellar lines in adults	Platysma Prominence	US	-	Approved
		Masseter Prominence	CN	-	Approved
HArmonyCa	A dual-action hybrid injectable, with Calcium Hydroxyapatite and cross-linked HA, being investigated to restore mid facial volume.	Facial Volume	EU	-	Approved
			-	Development	Not approved
JUVEDERM® VOLBELLA® XC	A cross-linked, HA injectable gel being investigated for use in infraorbital hollowing.	Infraorbital Hollowing	US	Confirmation	Approved
JUVEDERM® VOLITE® XC	A cross-linked, HA injectable gel being investigated to treat fine lines and skin quality attributes.	Fine Line Reduction	US, EU, JP	Confirmation	Approved
		Neck Line Reduction	NA	Confirmation	Not approved
JUVEDERM® VOLUMA® XC	A cross-linked, HA injectable gel being investigated for use in temple augmentation.	Temple Augmentation	US	Confirmation	Approved
JUVEDERM® VOLUX® XC	A cross-linked, HA injectable gel being investigated for use in facial contouring.	Jawline Definition	US	Confirmation	Approved
Next Generation Collagen Filler	A dermal filler using recombinant human collagen technology under investigation to improve mid-face volume.	Facial Volume	N/A	Confirmation	Not approved
Tropoelastin	An injectable gel comprised of a cross-linked tropoelastin matrix under investigation for the correction of atrophic scars.	Atrophic Scars	N/A	Confirmation	Not approved

Table 3. Allergan Aesthetics' Facial Injectable Portfolio and Development Pipeline. (Source: Allergan Aesthetics/AbbVie)

4.1.2 Merz Aesthetics (Merz Pharma)

Merz Pharma GmbH & Co. KGaA is an internationally active family-owned company, headquartered in Frankfurt am Main, Germany.[26] Merz is the parent company of independent businesses in the fields of aesthetic medicine, therapeutic medicine, and wellness and beauty products. Merz Aesthetics® is a leading, global aesthetics business, and with an award-winning portfolio of injectables, devices and skin care products.[27]

Recent Financial Updates

Information not available

2024 – 2025 Corporate Transactions

- In May 2024, Merz Aesthetics® led Acorn Biolabs' Series A funding round that totalled more than $8 million, and was to be used to develop the company's portfolio of cosmetic products using stem-cell derived treatments.[28]

2021 – 2025 Launches / Approvals / Applications

Information not available

Injectable Aesthetics Product Portfolio

Merz Aesthetics has two portfolios of facial injectables products – BELOTERO® and RADIESSE.

BELOTERO® Portfolio

The BELOTERO® dermal filler portfolio has seven products that are designed to be used in combination for facial rejuvenation. The collection of BELOTERO® HA dermal fillers has been specifically designed to target a variety of facial indications. BELOTERO®'s specific manufacturing process known as CPM® technology, results in different densities of HA, creating a combination of high and low-density zones.

Product	Use
BELOTERO® Volume (lidocaine)	Restoration of facial volume in: cheeks, chin, facial volume loss, temples
BELOTERO® Balance (lidocaine)	Correction of moderate lines such as: nasolabial folds, perioral lines, moderate oral commissures, lip enhancement, marionette lines
BELOTERO® Intense (lidocaine)	Correction of deeper lines such as: nasiolabial folds, lips enhancement, marionette lines
BELOTERO® Soft (lidocaine)	Correction of fine lines such as: perioral fine lines

[26] www.merz.com
[27] https://merz-aesthetics.co.uk/
[28] www.fasken.com/en/experience/2024/02/acorn-biolabs-closes-series-a-funding-round-led-by-merz-aesthetics

Product	Use
BELOTERO® Lips Shape	Lips lines and enhancement, such as: perioral lines, moderate and severe oral commissures, lip contour, lip enhancement
BELOTERO® Lips Contour	Lips lines and enhancement, such as: perioral lines, moderate and severe oral commissures, lip contour, lip enhancement
BELOTERO® Revive	Revitalisation of early-onset photodamaged facial skin as characterised by: dehydration, skin roughness, loss of elasticity and firmness, presence of superficial fine lines.

Table 4. Merz Aesthetics' BELOTERO® Product Portfolio. (Source: Merz Aesthetics)

RADIESSE portfolio

RADIESEE® is a biostimulator with calcium hydroxylapatite (CaHA) microspheres suspended in a sodium carboxymethylcellulose gel. RADIESSE+ also contains lidocaine. RADIESSE® is intended for deep dermal and sub-dermal soft tissue augmentation of the facial area and dorsum of the hands. RADIESSE® is the first and only FDA-approved CaHA injectable aesthetic treatment that provides immediate results and long-term improvement to lines and wrinkles.

4.1.3 Galderma

Galderma (Switzerland) delivers a portfolio of brands and services across Injectable Aesthetics, Dermatological Skincare and Therapeutic Dermatology.[29]

Financial Updates

2025

- In H1 2025 Galderma recorded net sales of $2.448 billion, at a net sales growth of 12.2%.[30]
- Specifically, injectable aesthetics net sales of $1,240 million, with year-on-year growth of 9.8% for injectable aesthetics, with especially strong growth in Brazil, Canada, China, Mexico and the UK.
- Neuromodulators recorded net sales of $707 million with an increase of 14.7% year-on-year.
- Fillers and biostimulators recorded net sales of $534 million with an increase of 3.9% year-on-year.
- In injectable aesthetics, Galderma continued to increase its share in both neuromodulators and fillers & biostimulators, despite the fillers market being impacted by a softer market and heightened promotional activity.

2024

- Galderma recorded net sales of $4,410 million for the full year 2024, representing on 9.3% year-on-year growth.[31]

[29] www.galderma.com/
[30] www.galderma.com/news/galderma-H12025-performance
[31] www.galderma.com/news/galderma.com/news/2024-annual-results

- Injectable Aesthetics net sales were $2,299 million, with year-on-year growth of 9.6%, and double-digit growth rates of Dysport® and Sculptra®.
- Neuromodulators net sales were $1,285 million for the full year, up 11.8% year-on-year. Galderma experienced particularly strong demand from enhanced European leadership and significant outperformance in Latin America, along with significant market share gains in the US and in China.
- Galderma had continued performance across all product categories with year-on-year growth of 9.6% for injectable aesthetics.
- Fillers and Biostimulators net sales were $1,014 million for the full year, up 7.0% year-on-year. Fillers saw sustained growth in Asia Pacific and Latin American markets but were impacted by softness in other key markets. Biostimulators had a continued strong growth trajectory globally.

- In the first quarter of 2024, Galderma listed on the SIX Swiss Exchange and banked almost 2.3 billion Swiss francs, the largest IPO in the world from January to March 2024.[32]

2024 – 2025 Corporate Transactions

- In August 2024, it was announced that L'Oréal were to acquire a 10% stake in Galderma to work towards a new R&D collaboration in the form of a scientific partnership to develop technologies with direct dermatological applications.[33]

2024 – 2025 Launches / Approvals / Applications

- In April 2025, Galderma launched Sculptra® in China, a regenerative biostimulator to correct mid-facial volume loss and/or contour deficiencies.[34]
- In May 2024, Galderma launched Restylane® Volyme™ in China, indicated for the correction of mid-face volume deficit and/or mid-face contour deficiency through injections into the subcutaneous to supraperiosteal layers of the skin.[35]
- In January 2025, Health Canada approved Restylane® SHAYPE™, a HA injectable designed for temporary augmentation of the chin region.[36]

Injectable Aesthetics Product Portfolio

Galderma's injectable aesthetics product portfolio consists of commercially available injectable neuromodulators and dermal fillers, and one pipeline injectable neuromodulator, as shown in the below table.

[32] www.greaterzuricharea.com/en/news/galderma-completes-largest-ipo-global-level-q1#:~:text=Zurich%2FZug%20-%20Galderma%20has%20banked%20nearly%202.3%20billion,came%20in%20at%2023.7%20billion%20US%20dollars%20overall
[33] www.loreal.com/en/press-release/group/loreal-groupe-acquires-stakes-in-galderma/
[34] www.galderma.com/news/galderma-launches-sculptrar-china
[35] www.galderma.com/news/galderma-launches-restylaner-volymetm-china-one-worlds-fastest-growing-aesthetics-markets
[36] www.galderma.com/news/galderma-announces-regulatory-approval-restylaner-shaypetm-new-hyaluronic-acid-injectable

Product	Type	About
ALLUZIENCE®	Injectable Neuromodulator	The first ready-to-use liquid botulinum toxin type A in Europe, available as a treatment to temporarily improve the appearance of moderate to severe glabellar lines.
Azzalure®	Injectable Neuromodulator	A local muscle relaxant adapted from the botulinum neuromodulator type-A of Dysport® and is specifically designed for use in aesthetic indications.
Dysport®	Injectable Neuromodulator	A local muscle relaxant (or neuromuscular blocking agent) adapted from the botulinum neuromodulator type-A and is used in aesthetic indications
Restylane®	Dermal Filler	The original HA gel dermal filler.
Restylane® Eyelight	Dermal Filler	An FDA-approved HA dermal filler formulated with NASHA® Technology, which fills in the undereye area to reduce shadows.
Restylane® Kysse	Dermal Filler	Made with XpresHAn Technology™, an innovative crosslinked HA gel, for fuller natural-looking lips.
Restylane® Lyft	Dermal Filler	A safe, effective, and dissolvable HA filler specifically designed to create structure in the cheek area or add fullness in the backs of the hands.
Restylane® Defyne	Dermal Filler	A HA filler that helps to soften deep laugh lines, such as nasolabial folds, and can be used to define the shape of the chin.
Restylane® Contour	Dermal Filler	The only cheek filler designed with XpresHAn Technology™ to restore cheek definition.
Restylane® Refyne	Dermal filler	Designed to smooth and soften lines and wrinkles, such as moderate smile lines and lines around the mouth. Designed with XpresHAn Technology™ for flexible refinement of dynamic areas
Restylane® Silk	Dermal Filler	Provides subtle lip plumping for thinning lips, as well as smoothing of lip wrinkles and lines around the mouth.
Sculptra®	Dermal Filler	A biostimulatory aesthetic injectable that helps stimulate natural collagen production to smooth facial wrinkles and improve skin tightness.
Relabotulinumtoxin A	Pipeline Injectable Neuromodulator	This product is under investigation as a novel, ready-to-use, liquid formulation of botulinum neuromodulator for the treatment of glabellar lines and lateral canthal lines. In 2023, results from phase IIIb trials demonstrated rapid and long-lasting effect on both.

Table 5. Galderma's Injectable Aesthetics Product Portfolio. (Source: Galderma)

4.1.4 Sinclair Pharma (Huadong Medicine)

Sinclair Pharma is a global medical aesthetics company based in the UK, that was acquired by Huadong Medicine Ltd (China) in 2018.[37] With an in-house commercial infrastructure, including manufacturing, company-owned affiliates and a network of distributors in leading global markets.

2024-2025 Financial Updates

- Huadong Medicine reported 2024 FY sales of CNY 41,508.41 million compared to CNY 40,261.35 million in 2023.[38]

[37] https://sinclair.com/
[38] www.marketscreener.com/quote/stock/HUADONG-MEDICINE-CO-LTD-6497912/news/Huadong-Medicine-Co-Ltd-Reports-Earnings-Results-for-the-Full-Year-Ended-December-31-2024-49662704/#:~:text=For%20the%20full%20year%2C%20the%20company%20reported%20sales,compared%20to%20CNY%202%2C838.86%20million%20a%20year%20ago

- Revenue was CNY 41,905.71 million compared to CNY 40,623.78 million in 2023.

2021 – 2025 Corporate Transactions

- In October 2023, Sinclair and ATGC entered into a strategic collaboration and licensing agreement under which Sinclair was granted a global exclusive licence (excluding India and non-exclusive South Korea) to develop and commercialise ATGC's botulinum toxin product.[39]
- In May 2022, Sinclair Pharma signed an exclusive product license and worldwide distribution agreement for Préime DermaFacial from EMA Aesthetics for all territories outside the UK and Germany.[40]
- In February 2022, Sinclair Pharma acquired Viora, an aesthetic medicine device company, to boost its energy-based devices portfolio and gain direct commercial base in the US.[41]
- In May 2021, Sinclair and Suneva Medical entered into a new partnership for the exclusive North American distributorship of Sinclair innovative Silhouette Instalift®.[42]

2024 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In May 2025, Sinclair launched MaiLi® Extreme, a HA injectable product powered by US patented OxiFree™ Technology.[43]

Injectable Aesthetics Product Portfolio

Sinclair's injectable aesthetics product portfolio consists of dermal fillers, as shown below.

Product	About	Use
Ellansé	A Poly-ε-caprolactone-based dermal filler that is an injectable implant.	Indicated for subdermal implantation in the face for the lasting correction of wrinkles & facial aging signs or conditions.
Lanluma	A poly-L-lactic acid implant	Suitable for increasing the volume of depressed areas, particularly to correct skin depressions.
MaiLi Precise	Patented HA filler	Smooth wrinkles & fine lines, define & enhance lips, treat under-eye bags & dark circles with tear trough filling, facial reconstruction of structural defects: scar tissue treatment
MaiLi Define	Patented HA filler	Define, shape & contour lips, fill & smooth deep depressions, fill nasolabial folds or 'smile lines', smooth marionette lines, facial reconstruction of structural defects: scar tissue treatment
MaiLi Volume	Patented HA filler	Fill and smooth deep depressions, add volume to cheeks & temples, contour facial features, facial reconstruction of structural defects: volume lost by HIV associated lipoatrophy
MaiLi Extreme	Patented HA filler	Sculpt & reshape face, enhance cheeks, chin & jawline, profile balancing, facial reconstruction of structural defects: volume lost by HIV associated lipoatrophy

[39] https://sinclair.com/news/sinclair-and-atgc-announce-global-license-agreement-to-develop-and-commercialize-botulinum-toxin-worldwide/
[40] https://sinclair.com/news/sinclair-announces-exclusive-product-license-and-worldwide-distribution-agreement-for-preime-dermafacial-with-ema-aesthetics-limited-for-all-territories-outside-the-uk-and-germany/
[41] https://sinclair.com/news/sinclair-announces-acquisition-of-viora/
[42] https://sinclair.com/news/sinclair-and-suneva-medical-announce-exciting-new-partnership-for-silhouette-instalift/
[43] https://sinclair.com/news/sinclair-unveils-maili-extreme-in-china/

Product	About	Use
Perfectha Finelines	HA filler	For superficial facial lines & skin depressions, periorbital fine lines, peribuccal fine lines, tear troughs
Perfectha Derm	HA filler	Medium facial lines & skin depressions, nasolabial folds, marionette lines, lip enhancement, scars
Perfectha Deep	HA filler	Deep facial lines & skin depressions, nasolabial folds, marionette lines, face contouring & volumisation, cheekbones, chin, jawline, temples, nose, sub-orbicularis oculi fat, lip augmentation
Perfectha Subskin	HA filler	Creation of volume & facial contours, cheekbones, chin & jawline, temples, forehead, bridge of nose & hands

Table 6. Sinclair Pharma's Injectable Aesthetics Product Portfolio. (Source: Sinclair Pharma)

4.1.5 Revance Aesthetics (Revance)

Revance is a biotechnology company based in the US, that engages in the development, manufacture, and commercialisation of neuromodulators for various aesthetic and therapeutic indications in the US and internationally.[44]

Financial Updates

2024

- Revance Aesthetics' total net revenue for the third quarter of 2024 was $59.9 million compared to $54.1 million for the same period in 2023, representing an increase of 11%, due primarily to an overall increase in the sales volume of DAXXIFY® and the RHA® Collection, partially offset by an overall reduction in the average selling prices for both product lines.[45]
- The total net revenue for the first nine months of 2024 was $177.2 million compared to $154.3 million for the same period in 2023.

2021 – 2025 Corporate Transactions

- In February 2025, Crown Laboratories announced the completion of its acquisition of Revance Therapeutics at a purchase price of $3.65 per Share.[46]
- In January 2025, Teoxane submitted a proposal to acquire Revance for $3.60 per share, currently, Teoxane beneficially owns 6.2% of the outstanding shares of common stock of Revance.[47] This proposal provides a 16% premium over the $3.10 per share price in Revance's amended and restated merger agreement with Crown Laboratories as announced in December 2024.

[44] www.revance.com
[45] www.biospace.com/press-releases/revance-reports-third-quarter-2024-financial-results-provides-corporate-update#:~:text=Total%20net%20revenue%20for%20the%20third%20quarter%20ended,the%20average%20selling%20prices%20for%20both%20product%20lines
[46] www.revance.com/revance-crown-merger/
[47] www.sec.gov/Archives/edgar/data/1479290/000095010325000171/dp223145_ex9902.html

2024 – 2025 Aesthetic Injectables Launches / Approvals / Applications

Information not available.

Injectable Aesthetics Product Portfolio

Revance's injectable aesthetics product portfolio consists of one commercially available neuromodulator, a range of commercially available dermal fillers, and one pipeline neuromodulator, as shown below

Product	About	Potential Indication	Status
DAXXIFY®	Daxibotulinum toxin A-lanm injection	Glabellar Lines	FDA Approved
		Forehead Lines	Positive results in all three open label Phase 2 studies to evaluate dosing and injection
		Lateral Canthal Lines	
		Upper Facial Lines	
RHA Redensity™	RHA® 2, RHA® 3, RHA® 4	Perioral Rhytids (lip lines)	Phase 3 – FDA approved
		Dynamic facial wrinkles and folds (Nasolabial Folds)	FDA approved
Neuromodulator	Biosimilar to BOTOX® (partnered with Viatris)	-	Preclinical

Table 7. Revance Aesthetics' Injectable Aesthetics Product Portfolio. (Source: Revance Aesthetics)

4.1.6 Teoxane

Teoxane specialises in the development of HA solutions and is based in Switzerland.[48] The company produced 3,000,000 boxes in 2022, reaching over 90 countries with its 15 formulations, owns 180 patent titles, and markets a range of 14 at-home skincare products inspired from aesthetic medicine and manufactured with Teoxane's signature ingredient, RHA®.

Financial Updates

Information not available.

2021 – 2025 Corporate Transactions

Information not available.

2023 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In December 2023, Teoxane became the first company to receive the EU MDR certification for its entire product range.[49]

[48] www.teoxane.com/en
[49] www.teoxane.com/en/teoxane-mdr-certification

Injectable Aesthetics Product Portfolio

Product	Purpose
TEOSYAL® PURESENSE ULTRA DEEP	Has been specifically designed for lift and projection. Ideally combined with TEOSYAL RHA® 4, for a multilayered approach that comprehensively treats mid-face volume loss.
TEOSYAL® PURESENSE REDENSITY 1	Has been specifically designed to improve the quality of the skin, it helps protect the skin against oxidative stress.
TEOSYAL PURESENSE KISS®	Has been designed to enhance lips with added volume and contouring.
TEOSYAL® PURESENSE REDENSITY 2	The first and only HA gel specifically designed for the delicate under eye

Table 8. Teoxane's Injectable Aesthetics Product Portfolio. (Source: Teoxane)

4.1.7 Medy-Tox

Medy-Tox is a biopharmaceutical company based in South Korea, that launched botulinum toxin type A Meditoxin® in 2006 and has the highest market share in the global botulinum market.[50]

Financial Updates

2025

- Medytox's filler division recorded sales of 82.7 billion won in 2024, an increase of 7.2% from 77.1 billion won in 2023, although in contrast to the decrease in toxin from 116.6 billion won in the same period.[51]
- Medytox recorded sales of 22 billion won in the filler sector in Q1 2025, which is the highest amount compared to Q1-4 in 2024.

2024

- Medytox reported a 2024 Q3 revenue of 53.9 billion won ($38.7 million), which was a 98.2% decline from the same period in 2023, and operating profit rose by 67.9% to 6 billion won.[52]
- Sales of toxin products fell 24% year-over-year, owing to reduced production for exports.
- Neuramis maintained growth in Q3, with domestic and international sales rising by 32% and 2% year-over-year, respectively, with particularly strong performance in Europe.

2021 – 2025 Corporate Transactions

- In January 2025, Medytox announced that it had signed business agreements with Korean biotech start-ups Mimetics and Exollence Biotechnology as part of the 2024 Seoul Biohub-Medytox Open Innovation Program.[53]

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[50] www.medytox.co.jp
[51] www.edaily.co.kr/News/Read?newsId=01085686642230256&mediaCodeNo=257&OutLnkChk=Y
[52] www.koreabiomed.com/news/articleView.html?idxno=25664#:~:text=Medytox%20reported%20third-quarter%20revenue%20of%2053.9%20billion%20won,rose%20by%2067.9%20percent%20to%206%20billion%20won
[53] www.koreabiomed.com/news/articleView.html?idxno=26234

- In December 2024, Medytox and its affiliate Numeco signed a distribution agreement with China's Hainan Sihou Investment Co. for the export of their next-generation botulinum toxin formulation Neulux and HA filler Neuramis to China.[54]
- In March 2024, Medytox entered into a five-year contract Brazilian pharmaceutical firm Blau Farmacêutica to provide Botox products throughout Brazil valued at $73 million.[55]

Recent Litigious Actions

- In March 2025, Medytox won an administrative lawsuit against the Korean Ministry of Food and Drug Safety in the Supreme Court, which previously cancelled product approval and ordered a stop to manufacturing and selling the botulinum toxin product "Medytoxin", claiming that it was produced with unapproved raw materials.[56]
- In February 2025, Medytox's CEO was acquitted of charges related to the alleged illegal manufacturing and distribution of botulinum toxin products between 2012 and 2015 in the first trial ruling.[57]
- In January 2025, Medytox appeals the US International Trade Commission's (ITC) ruling in favour of Hugan in their botulinum toxin -related lawsuit.[58] In October 2024, the US International Trade Commission issued a final ruling that there was no violation of Section 337 in favour of Hugel based on Medytox's allegation of unfair practices concerning the importation of certain botulinum neurotoxin products into the US, ultimately accusing Hugel of stealing Medytox's botulinum toxin strains.[59] As a result of this decision, Hugel has been allowed to roll out its Letybo botulinum toxin product in the US.[60]

2024 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In February 2025, Medytox launched a new botulinum toxin line – PF30 is an improved version of the non-animal liquid botulinum toxin product MT10109L and MT951 a next-generation toxin product being developed through genetic recombination.[61]
- In February 2025, the Serbian Medicines and Medical Devices Agency (ALIMS) approved two types of Medytox's HA fillers, "Neuramis".[62]
- In December 2024, the Thai FDA approved Medytox's affiliate Numeco's botulinum toxin product "Newlux".[63]
- In December 2024, the Peruvian Medicines Agency approved Medytox's affiliate Numeco's botulinum toxin product "Newlux".[64]

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[54] www.businesskorea.co.kr/news/articleView.html?idxno=231531
[55] www.koreabiomed.com/news/articleView.html?idxno=23662
[56] https://biz.chosun.com/en/en-science/2025/03/13/NUH5TTKOPRES7EHARQ5TEHYX5E/#:~:text=Medytox%20won%20a%20final%20victory%20in%20an%20administrative,claiming%20it%20was%20produced%20with%20unapproved%20raw%20materials
[57] www.koreabiomed.com/news/articleView.html?idxno=26569
[58] www.koreabiomed.com/news/articleView.html?idxno=26264
[59] www.prnewswire.com/news-releases/itc-issues-final-ruling-in-favor-of-hugel-no-violation-of-section-337-302273509.html
[60] www.koreatimes.co.kr/business/companies/20241011/medytox-protests-us-international-trade-commission-ruling-in-favor-of-rival-hugel
[61] https://biz.chosun.com/en/en-science/2025/02/05/T54HRCEGAFFMJNOW3C5KSYD7KM/
[62] www.businesskorea.co.kr/news/articleView.html?idxno=235851#google_vignette
[63] www.businesskorea.co.kr/news/articleView.html?idxno=232600
[64] https://biz.chosun.com/en/en-science/2024/12/12/GSLAOP2NEBHWZGNIQ6S22ZEACI/

- In November 2024, the Thai FDA approved Medytox's HA filler Atiere in two different types – intensive and volume.[65]
- In October 2024, the UAE Health Authority (MOHAP) approved two types of Medytox's "Neuramis" HA fillers - "Nuramis Deep Lidocaine" and "Nuramis Volume Lidocaine".[66]
- In June 2024, Indonesian health authorities approve Medytox's HA filler Atiere in three different types – classic, intensive, and volume.[67]
- In February 2024, the US FDA declined Medytox's biologics license application for its non-animal liquid botulinum toxin product, MT10109L, aimed at reducing moderate to severe glabellar and lateral canthal lines.[68]

Injectable Aesthetics Product Portfolio

Medy-Tox's injectable aesthetics product portfolio consists of BOTOX and HA filler products, as shown below.

Type	Product	Indication and Usage
Botulinum Toxin	Neuronox®	Effective and safe for treatment of moderate to severe glabellar lines
	INNOTOX®	To temporarily improve moderate to severe glabellar wrinkles related to eyebrow wrinkle muscle (corrugator muscle) and/or procerus muscle activity
	Coretox®	To temporarily improve moderate to severe glabellar wrinkles related to eyebrow wrinkles muscle (corrugator muscle) and/or procerus muscle activity
	NEWLUX®	To temporarily improve moderate to severe glabellar wrinkles related to eyebrow wrinkles muscle (corrugator muscle) and/or procerus muscle activity
HA Filler	Neuramis®	To be used for moderate to severe facial wrinkles and folds (such as nasolabial folds).
	Atiere	For filling wrinkles, especially recommended for deep furrows. It can also be used to provide contour and volume to lips and cheeks. It is also suitable for enhancing the jawline, nose and chin.
	Potenfill	For temporary penile enhancement.

Table 9. Medy-Tox's Injectable Aesthetics Product Portfolio. (Source: Medy-Tox)

4.1.8 Bloomage Biotech

Bloomage Biotech is a biomaterials company based in China, which primarily specialises in HA and other bioactive substances products.[69]

[65] www.koreabiomed.com/news/articleView.html?idxno=25869#:~:text=The%20product%20includes%20two%20formulations%3A%20Atiere%20Volume%2C%20designed,features%20medium-sized%20particles%20for%20treating%20moderately%20deep%20wrinkles
[66] https://www.mk.co.kr/en/it/11149168
[67] www.koreabiomed.com/news/articleView.html?idxno=24340#:~:text=Medytox%20said%20it%20has%20received%20product%20approval%20from,brand%20Atiere%20received%20approval%20in%20Indonesia.%20%28Credit%3A%20Medytox%29
[68] www.koreabiomed.com/news/articleView.html?idxno=23441
[69] www.bloomagebioactive.com/En

Financial Updates

- Bloomage reported a total operating income of 5.371 billion yuan, with a year-on-year decrease of 11.61% for its FY 2024 results.[70]

Recent Litigious Actions

- In January 2023, Gentix Ltd, a subsidiary of Bloomage, filed a claim for damages against Medytox for contract violation with the Singapore International Arbitration Center, the claim amount was valued at $96.4 million. Gentix also filed a claim to confirm that the contract clause of Medybloom China, a local joint venture between Medytox and Bloomage was violated, and that Gentix had the right to terminate the contract.[71] No further information could be found on the outcome of this claim.

Recent Disputes

- In May 2025, Bloomage Biotech accused Giant Biogene of false advertising when publishing a 5000-word report accusing nine equity research houses of over emphasising the merits of recombinant collagen over HA.[72] A media fracas ensued, which subsequently led to shares of Giant Biogene dropping by 30% in just under a month, whereas Bloomage's shares were up approximately 7%.

2021 – 2025 Corporate Transactions

No information available.

2023 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In October 2024, Bloomage unveiled its Hyatrue® Sterile HA that retains its high viscosity and molecular weight, and with its high purity and stability, it has been specifically designed for complex sterile formulations.[73]

Injectable Aesthetics Product Portfolio

Product	About	Applications
Hyatrue™ Injection Grade Sodium Hyaluronate	A mucopolysaccharide composed of repeating disaccharide units of glucuronic acid and N-acetylglucosamine.	For ophthalmic surgery; for knee arthritis, osteoarthritis and scapulohumeral periarthritis; for ophthalmic viscoelastic devices, dermal fillers, anti-adhesive agent, etc.

[70] www.yicaiglobal.com/star50news/2025_04_10681415080567164109 7
[71] www.koreabiomed.com/news/articleView.html?idxno=20283
[72] https://thebambooworks.com/biogene-gets-bruised-in-battle-of-the-skincare-belles/
[73] www.prnewswire.com/news-releases/bloomage-debuts-new-products-at-cphi-milan-to-reinforce-its-commitment-to-innovation-302275728.html

Product	About	Applications
BloomseaN™ PDRN / Polydeoxyribonucleotide (Pharmaceutical Grade)	A mixture of deoxyribonucleotides derived from Salmon, Trout or Chum Salmon sperm DNA through strict purification processes, which has high safety and stability.	Mesotherapy and dermal-fillers
BloomseaN™ PN / Polynucleotide (Pharmaceutical Grade)	A polynucleotide chain polymer, interconnected by a multitude of nucleotides.	Can be widely used in mesotherapy / skin boosters, dermal fillers, intra-articular injections for osteoarthritis treatment, and other medical products

Table 10. Bloomage's Injectable Aesthetics Product Portfolio. (Source: Bloomage)

4.2 Emerging Players

4.2.1 Croma-Pharma® GmbH

Croma is a global player in the dynamically growing minimally invasive aesthetics market and a leading European manufacturer of premium quality HA syringes, based in Austria.[74] The company offers an aesthetics portfolio including HA fillers, PDO threads and biostimulators complemented by its own skincare brand.

Financial Updates

Information not available.

2021 – 2025 Corporate Transactions

- In July 2025, Croma-Pharma announced the acquisition of Novaestiq Corp. (a joint venture between Croma-Pharma and Gore Range Capital) by Waldencast.[75] Novaestiq's Saypha® ChIQ™ and Saypha® MagIQ™ injectable HA gels are set to launch in the US under the Obagi Medical brand.
- In March 2024, Croma entered into a partnership with Megalabs to bring high-performance aesthetic products to the entire Latin American region.[76]

2023 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In February 2024, Hugel, a Korean toxin manufacturer and partner of Croma received US FDA approval Letybo®, the company's botulinum toxin product – which is the sixth botulinum toxin product to achieve this milestone globally.[77]
- In 2023, Croma launched PhilArt, a complete series of injectable biostimulators.[78]
- In October 2023, Croma became the first industry company to achieve European certification under the Medical Device Regulation (MDR) 2027/745 for aesthetic purposes (MDR Annex XVI),

[74] www.cromapharma.com/uk/?url=%2Fhome-en%2F
[75] www.cromapharma.com/int/about-croma/press-and-downloads/-3/
[76] www.cromapharma.com/int/about-croma/press-and-downloads/croma-pharma-announces-partnership-with-megalabs/
[77] www.cromapharma.com/assets/downloads/letybo-receives-fda-approval-for-the-treatment-of-glabellar-lines/Press-release_Letybo-FDA_eng_29thFeb.pdf
[78] www.cromapharma.com/assets/downloads/croma-pharma-further-strengthening-its-portfolio-with-biostimulators/2303-PhilArt-Business-EN-FNL.pdf

meaning that "Saypha® RICH" is the first of a total of seven Croma-Pharma product groups to successfully complete the MDR certification process. The six additional products from the Saypha® range will be approved by the first quarter of 2024.[79]

- In May 2023, Croma receiving marketing authorisation for Letybo®, the company's botulinum toxin product, in 12 additional European markets - Belgium, Cyprus, Czech Republic, Denmark, Finland, Greece, Hungary, Luxembourg, Malta, Norway, Slovakia and Sweden.[80]

There is no publicly available information on Croma's HA dermal filler product portfolio.

4.2.2 Neauvia (MatexLab Group)

Part of the MatexLab Group, which is backed by leading central European private equity firm Abris Capital, **Neauvia**, based in Switzerland is a pioneer in medical aesthetics and has developed ground-breaking synergistic smart combination therapies.[81] Neauvia's products are distributed in more than 80 countries worldwide. The Company is a high-growth multinational corporation with production sites and subsidiaries in Italy, Switzerland, France, Spain, Poland, Germany, the UK and the US.

Financial Updates

Information not available.

2021 – 2025 Corporate Transactions

Information not available.

2023 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In February 2023, Neauvia attained CE marking under the EU's new MDR for its range of facial dermal fillers products and became the first medical aesthetics business to be granted the certification in Europe.[82]

Injectable Aesthetics Product Portfolio

Product	About	HA Concentration	Treatment Area(s)
HYDRO DELUXE	Non-crosslinked hydrogel enriched with CaHA (HA hydrogel with L-Proline and Glycine).	18 mg/ml	Face and Neck
HYDRO DELUXE MAN	Non-crosslinked hydrogel enriched with CaHA (HA hydrogel with L-Proline and Glycine)	18 mg/ml	Face and Neck
INTENSE	Pegylated dermal filler (crosslinked HA hydrogel with L-Proline and Glycine)	28 mg/ml	Face

[79] www.cromapharma.com/assets/downloads/croma-pharma-is-the-first-company-worldwide-to-achieve-mdr-approval-in-the-aesthetic-field/20231030_Presseinformation_MDR-certificate_EN_final.pdf
[80] www.cromapharma.com/assets/downloads/230509-Press-Release-Letybo-wave-2-.pdf
[81] www.neauvia.com/
[82] www.neauvia.uk/wp-content/uploads/2023/07/MDR-PR.pdf?_gl=1*lln22l*_up*MQ.*_ga*NTg0ODExNDEzLjE3NTQ2NDAzMDM.*ga_T58MEQ2HY2*czE3NTQ2NDAzMDIkbzEkZzEkdDE3NTQ2NDAzMzIkajMwJGwwJGgw

Product	About	HA Concentration	Treatment Area(s)
INTENSE FLUX	Pegylated dermal filler (crosslinked HA hydrogel with L-Proline and Glycine)	26 mg/ml	Face
INTENSE LV	Pegylated dermal filler (crosslinked HA hydrogel with L-Proline and Glycine)	26 mg/ml	Face
INTENSE MAN	Pegylated dermal filler (crosslinked HA hydrogel with L-Proline and Glycine)	28 mg/ml	Face
INTENSE RHEOLOGY	Pegylated dermal filler (crosslinked HA hydrogel with L-Proline and Glycine)	22 mg/ml	Face
STIMULATE	Pegylated dermal filler enriched with CaHA (crosslinked HA hydrogel with L-Proline and Glycine)	26 mg/ml	Face
STIMULATE MAN	Pegylated dermal filler enriched with CaHA (crosslinked HA hydrogel with L-Proline and Glycine)	28 mg/ml	Face

Table 11. Neauvia's Injectable Aesthetics Product Portfolio. (Source : Neauvia)

4.2.3 Prollenium Medical Technologies

Prollenium Medical Technologies is a Canadian-based company focused exclusively on the research and manufacturing of dermal fillers.[83]

Financial Updates

Information not available.

2021 – 2025 Corporate Transactions

- In January 2024, Prollenium entered a strategic partnership with Sisram Medical to expand Sisram's injectables product portfolio and offer a unique combination of high-quality dermal filler with energy-based devices, and Sisram will have exclusive distribution rights for the Revanesse® collection in several key markets.[84]

2024 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In January 2025, Prollenium announced that they are now focused on advancements in the future of skin regeneration products and technology, and the upcoming product line will highlight breakthroughs in PDRN (polydeoxyribonucleotide) science, exosome-based therapies, and collagen-stimulating biostimulants.[85]

[83] https://prollenium.com/
[84] https://uk.marketscreener.com/quote/stock/SISRAM-MEDICAL-LTD-39103926/news/Sisram-Medical-Ltd-Enters-into-Strategic-Partnership-with-Prollenium-45690546/
[85] https://secure.businesswire.com/news/home/20250130018276/en/Prollenium-Marks-New-Era-in-Skin-Rejuvenation-with-Innovative-Technologies

Recent Litigious Actions

- In May 2025, the founder and former CEO of Prollenium commenced legal proceedings in Canada against ArchiMed, Panacea Holdings, Prollenium Medical Technologies, and related entities, claiming allegations of shareholder oppression, breach of contract and wrongful dismissal.[86]

Injectable Aesthetics Product Portfolio

Product	About	Treatment Areas
Revanesse® Shape™+	The highest viscosity HA gel used to sculpt and volumize deep tissue areas, Shape™+ can help create high impact yet touchable projection and lift.	Cheeks; chin; jawline
Revanesse® Contour™+	A thick, high viscosity HA gel that can be used to treat other large volume areas and help to sculpt and contour for a firm, lifted appearance.	Cheeks; chin; jawline; temples
Revanesse® Ultra™+	A medium viscosity, versatile HA gel that can be used to correct deeper wrinkles and folds, providing volume to help restore and contour facial features.	Cheeks; nasolabial folds; marionette lines; oral commissures
Revanesse® Kiss™+	A smooth HA gel that can be used to hydrate, plump, and shape the lips and perioral region.	Lips; perioral lines
Revanesse® Outline™+	A smooth and viscous HA gel which can be used to create volume in deep tissue areas. It is also ideal for creating shape or structure in the lips.	Cheeks; chin; jawline; vermillion border; lips
Revanesse® Pure™+	A non-cross-linked HA gel used to nourish and hydrate the skin, replenishing natural HA in the skin for rejuvenated, healthier-looking skin.	Overall skin texture; perioral lines; emerging lines

Table 12. Prollenium's Revannesse Injectable Filler Product Portfolio. (Source: Prollenium)

4.2.4 IMEIK Technology Development

IMEIK Technology Development is biomaterials company based in China, which is focused on innovating biomedical soft tissue materials, and has commercialised HA fillers and facial implant threads.[87]

Financial Updates

Information not available.

2021 – 2025 Corporate Transactions

Information not available.

2024 – 2025 Aesthetic Injectables Launches / Approvals / Applications

[86] https://finance.yahoo.com/news/ario-khoshbin-files-oppression-lawsuit-100300955.html
[87] www.imeik.com/en/

Information not available.

Injectable Aesthetics Product Portfolio

Product	Treatment Areas
Cross-Linked Sodium Hyaluronate Gel with PLLA-b-PEG Microsphere	Deep dermal, Subcutaneous shallow and deep to injection filling to correct the moderate to severe nasolabial groove wrinkles.
Medical Sodium Hyaluronate-Hydroxypropyl Methylcellulose Gel	Used for filling superficial and deep skin to correct moderate and severe forehead and nasolabial groove wrinkles.
Sodium Hyaluronate Composite Solution For Injection	Used for intradermal dermis injection to correct moderate and severe wrinkles in the neck.
Modified Sodium Hyaluronate Gel For Injection	used for dermal injection filling to correct the moderate to severe nasolabial groove.

Table 13. IMEIK Technology Development's Injectable Aesthetics Product Portfolio. (Source: IMEIK)

4.2.5 Aquavit Pharmaceuticals

Aquavit Pharmaceuticals is a multi-specialty healthcare company focused on discovering, developing and commercialising innovative pharmaceuticals, medical devices, and health technologies.[88]

Financial Updates

Information not available.

2021 – 2025 Corporate Transactions

Information not available.

2023 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In May 2023, Avaquit announced that it received FDA clearance to Phase II/III initiate clinical trials for DTX-023 (aqubotulinumtoxinA) and DTX-024 (aqubotulinumtoxinA with intradermal microinjector) following its submission of Investigational New Drug Applications.

Recent Litigious Actions

- In March 2023, Aquavit received a final award of over $10 million in damages from the US District Court for the Southern District of New York.[89] The Court was also sanctioned additional $7.3 million for contemptuous conduct. The total damages included trademark infringement, counterfeiting, defamation, and attorney fees and costs. The Defendants, U-BioMed, Global Medi

[88] www.aquavitpharma.com/medical-aesthetics-1
[89] www.aquavitpharma.com/post/aquavit-awarded-10m-in-damages-on-intellectual-property-against-counterfeiters

Products and the owner/operator Eum Nyun shik, operate in South Korea and have been manufacturing, marketing and advertising counterfeit goods using Aquavit's logos, packaging designs, written materials, and digital media assets. In 2019, U-BioMed was formally indicted and found guilty of infringement of Aquavit's trademark in the South Korean criminal court. In 2020, the EU court invalidated U-BioMed's registration of the infringing mark. U-Biomed was also defeated in the Korean civil court on allegations stemming from the IP.

Injectable Aesthetics Product Portfolio

Product	About	Treatment Areas
DTX-021	A botulinum toxin that is an injectable neuromodulator.	Has shown equivalency to onabotulinumtoxinA (BOTOX®) on treating glabellar lines and improvement on periorbital rhytids.
DTX-023	A botulinum toxin that is an injectable neuromodulator.	-
DTX-024	A botulinum toxin that is an injectable neuromodulator, with intradermal microinjector.	-
AQUABELO™	Patented freeze vacuum dried HA crystal balls for intradermal and interdermal delivery	-

Table 14. Aquavit's Injectable Aesthetics Product Portfolio (Source: Aquavit)

4.2.6 Spiderwort Biotechnologies

Spiderwort Biotechnologies is a biotechnology company based in Canada, with a cellulose-based biomaterial platform that will serve as the scaffolds for applications including regenerative medicine and lab-grown meat.[90]

Financial Updates

Information not available.

2021 – 2025 Corporate Transactions

- In July 2022, Spiderwort announced the successful completion of its $13.2 million Series A financing, led by Horizons Ventures and supported by K5 Global, BoxOne Ventures, and Break Off Capital.[91]

2024 – 2025 Aesthetic Injectables Launches / Approvals / Applications

- In June 2025, Spiderwort received Investigational Testing Authorization (ITA) from Health Canada for CelluJuve®, which will enable the company to initiate a human clinical trial in Canada to evaluate the safety and performance of CelluJuve® for tissue augmentation and rejuvenation.[92]

[90] https://spiderwortbio.com/
[91] https://spiderwortbio.com/news/spiderwort-series-a-announcement/
[92] https://spiderwortbio.com/news/spiderwort-biotechnologies-receives-health-canada-ita/

- In April 2025, Spiderwort announced the completion of ISO10993 biocompatibility testing and human skin safety testing for CelluJuve®.[93]

Injectable Aesthetics Product Portfolio

Product	About	Treatment Areas
CelluJuve®	A cellulose-based dermal filler solution that aims to provide structural support for soft tissue augmentation and rejuvenation.	Initial target is nasolabial fold remediation.

Table 15. Spiderwort's Injectable Aesthetics Product Portfolio (Source: Spiderwort)

4.3 Academic and Research Players

While the global facial injectables market is driven by established and emerging commercial players, a significant body of knowledge and innovation stems from academic institutions, hospitals, and research organisations. These organisations contribute through clinical research, biomaterials innovation, safety assessments, and the development of next-generation injectables. They also provide the critical evidence base that underpins regulatory approvals, practitioner adoption, and refinements in treatment protocols.

To better understand this landscape, Wellspring's proprietary AI platform, Scout[94], was used to analyse scholarly publications from 2020 to 2025, using the targeted search terms "DERM+ FILLER" OR "COSMETIC FILLER*" OR "FACIAL INJECT*" OR "FACIAL FILLER"*. This analysis mapped the publishing activity of universities, hospitals, and research institutions, as well as their networks of collaborations.

In total, 1,425 publications were identified during the period. Universities represented the largest share, 72%, followed by hospitals, 19%, and research institutions, 6%, companies and foundations are the smallest groups representing 3% combined.

[93] https://spiderwortbio.com/news/spiderwort-biotechnologies-inc-announces-status-of-biocompatibility-testing-for-cellujuve/
[94] https://www.wellspring.com/scout

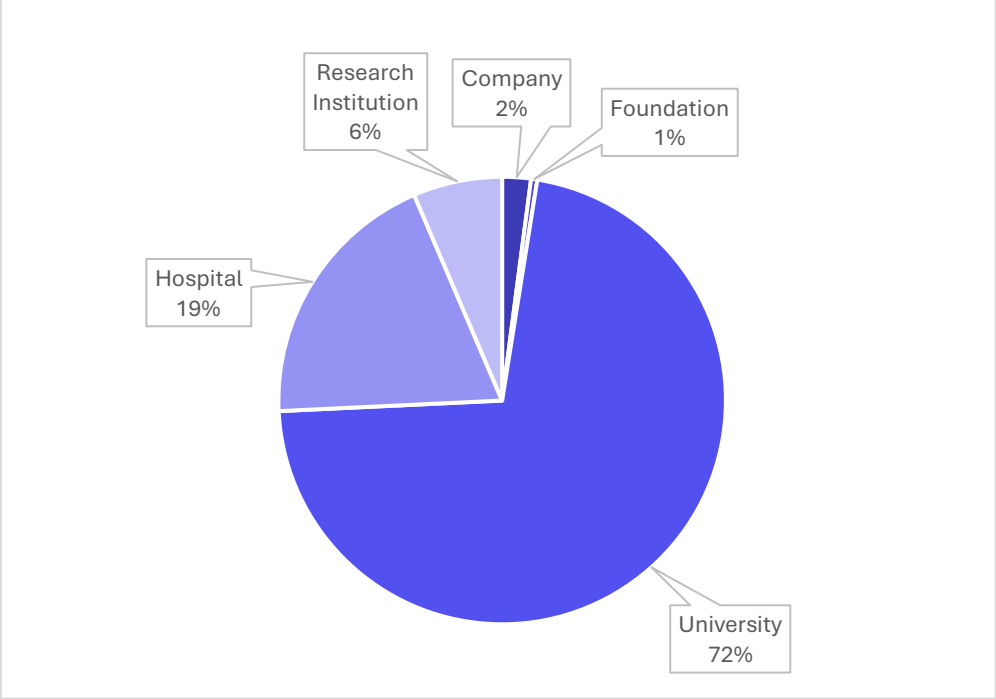

Figure 3. Breakdown of publications from 2020-2025, by Organisation Type. (Source: Scout)

#	Name	Count
1	Yonsei University	68
2	University of California System	62
3	Chinese Academy Of Sciences	50
4	Peking Union Medical College	47
5	Mayo Clinic College of Medicine and Science	39
6	Ludwig Maximilian University of Munich	27
7	University of British Columbia	24
8	Harvard University	23
9	Chung Ang University	22
10	University of Illinois at Urbana-Champaign	22
11	Mayo Clinic	21
12	Catholic University of America	20
13	Erasmus Medical Center	19
14	University of California, Irvine	18
15	University of Pennsylvania	18
16	Mahidol University	18
17	University of Miami	17
18	University of Verona	17
19	Monash University	16
20	McGill University	16

Table 16. Top University, Hospital and Research Institutions by Publication Numbers. (Source: Scout)

Publication leadership is distributed across Asia (South Korea, China), North America (United States, Canada), and Europe (Germany, Italy). Asian institutions, particularly **Yonsei University, Peking Union Medical College,** and the **Chinese Academy of Sciences** demonstrate a dual focus on advanced anatomical mapping and innovation in biomaterials. Research is characterised by high-resolution cadaveric and imaging studies tailored to Asian facial morphology, widespread adoption of ultrasound and CT for safety assurance, and significant activity in the development of novel filler classes such as PLLA, PDLLA, and PCL.

North American centres such as the **University of California System, Harvard University**, the **University of Pennsylvania**, and **Mayo Clinic/ Mayo Clinic College of Medicine and Science**, is predominantly practice-driven and outcomes-oriented, with strong emphasis on emergency management protocols, precision injection techniques, and the evaluation of online health information. US research also highlights gaps in evidence for patients with skin of colour and documents early experience with hybrid filler combinations and adjunctive treatment modalities.

European contributors, including **LMU Munich, Erasmus Medical Center**, **Verona,** and **Monash**'s international collaborations, represents the global reference point for safety protocols, consensus guidelines, and regulatory frameworks in the use of facial fillers. The region leads in the development of evidence-based complication management algorithms, hyaluronidase protocols, and multidisciplinary consensus statements, while also contributing substantive research on rheology, filler degradability, and hybrid formulations. European publications additionally stand out for their integration of psychosocial, ethical, and regulatory perspectives, positioning the region at the intersection of clinical science, governance, and patient-centred care.

5 Product Overview and Clinical Evidence

Facial injectable products can be classified into several types, each with distinct mechanisms and uses in cosmetic and clinical practice. This section provides an overview of the major injectable categories, their primary aesthetic applications, and common brand names. The main types of injectables covered include Botulinum Toxin, Collagen fillers, Hyaluronic acid (HA) fillers, Calcium Hydroxylapatite (CaHA) fillers, Poly-L-lactic Acid (PLLA) fillers, Polymethyl-methacrylate (PMMA) fillers, Autologous Fat injections, and some emerging niche injectables.

5.1 Botulinum Toxin (Neuromodulators)

Botulinum toxin is a neurotoxic protein produced by the bacterium *Clostridium botulinum,* there are eight distinct exotoxins (A, B, C_1, C_2, D, E, F, and G). Among these, type A is the most extensively utilised in aesthetic medicine, due to its favourable safety and efficacy profile. In clinical practice, botulinum toxin type A is used in a highly diluted, purified form as a neuromodulator to relax targeted muscles. Its mechanism of action involves the inhibition of acetylcholine at the neuromuscular junction, thereby preventing muscle fibres from contracting. The resulting temporary muscle paralysis in the treated area can smooth the overlying skin and diminishes the appearance of dynamic wrinkles (the expression lines that form from repeated muscle movement). For cosmetic use, the effect typically lasts 3 to 4 months, after which muscle activity (and wrinkles) gradually returns as nerve terminals form new connections.[95]

Product (INN)	Sponsor / Developer	Key Applications	Number of Clinical Trials	Date Range
OnabotulinumtoxinA (Botox®)	AbbVie	Glabellar lines, crow's feet, forehead lines	34	2002-2025
AbobotulinumtoxinA (Dysport®)	Ipsen/Galderma	Glabellar lines, forehead, crow's feet	22	1999-2022
IncobotulinumtoxinA (Xeomin®)	Merz	Glabellar lines, crow's feet	20	2006-2023
PrabotulinumtoxinA (Jeuveau®)	Evolus/Daewoong	Glabellar lines	14	2012-2023
DaxibotulinumtoxinA (Daxxify®)	Revance	Glabellar lines, crow's feet	34	2008-2024

Table 17. Summary of Clinical Trial Activity of Botulinum Toxin Type A in Aesthetic Dermatology. (Source: GlobalData)

As summarised, clinical development activity for botulinum toxin type A is extensive and sustained, with programs concentrated on a small set of core aesthetic indications (glabellar lines, lateral canthal lines, and forehead lines). OnabotulinumtoxinA and daxibotulinumtoxinA show the largest registered evidence footprints, each spanning more than a decade, while incobotulinumtoxinA and prabotulinumtoxinA reflect smaller but focused portfolios. The date ranges indicate a mature category

[95] Carruthers J, Carruthers A. (2009) Botulinum toxin in facial rejuvenation: an update. *Dermatol Clin.* 27(4):417-25, v. doi: 10.1016/j.det.2009.08.001.

with continued lifecycle management and indication extensions, and the dispersion of sponsors (AbbVie, Ipsen/Galderma, Merz, Evolus/Daewoong, Revance) underscores competitive breadth.

5.2 Collagen Fillers

Collagen-based fillers were the first injectable approved by the FDA for cosmetic use (Zyderm® in 1981).[96] Collagen fillers work by supplementing the skin's own collagen, plumping up wrinkles or depressed scars from beneath. These fillers were popular throughout the 80s and 90s, but have since been surpassed by HA fillers and other biostimulatory fillers.

Today, the main collagen-based filler on the market is Bellafill®, a PMMA-collagen hybrid (80% bovine collagen gel with 20% PMMA microspheres; Bellafill® is discussed more under PMMA section). Many pure collagen products have been discontinued but collagen fillers' legacy demonstrates its importance as a precursor to modern aesthetic fillers which aim to induce the recipient's own collagen rather than injecting bovine collagen.

5.3 Hyaluronic Acid (HA) Fillers

Hyaluronic Acid (HA) fillers are one of the most widely used dermal fillers in aesthetic practice. HA is a naturally occurring glycosaminoglycan found in skin and connective tissues, where it contributes to hydration and structural integrity through its high water-binding capacity. In vivo, unmodified HA is rapidly degraded by hyaluronidases, however commercial HA formulations are chemically cross-linked to increase its longevity in the facial tissue.[97] The clinical performance of HA fillers is reported to vary according to the degree of cross-linking, concentration and particle size, which influence the viscosity, cohesivity and tissue integration of the filler. Studies on the longevity of HA fillers in the skin have demonstrated a significant decreasing in wrinkle prominence as early as 3 weeks post treatment and continued to see a significant decrease in wrinkle prominence until 18 months for moderately mobile areas (forehead, upper lip, cheek folds and crow's feet).

Product Line (INN/Brand)	Manufacturer / Sponsor	Key Applications	Clinical Trials	Date Range
Juvéderm®	AbbVie / Allergan	Moderate folds, lips, deep cheek augmentation, fine perioral lines	44	2008-2025
Restylane®	Galderma	Wrinkle correction, midface volume, lips, dynamic expression lines	51	2008-2025
Belotero®	Merz	Superficial line correction, integration into dermis	12	2013-2023
Teosyal®	Teoxane	Dynamic wrinkles, contouring, skin quality	8	2014-2024
Revanesse® Versa™	Prollenium	Moderate to severe wrinkles and folds	4	2015-2021

[96] Kontis TC, Rivkin A. (2009) The history of injectable facial fillers. *Facial Plast Surg.* 25(2):67-72. doi: 10.1055/s-0029-1220645

[97] Wongprasert P, Dreiss CA, Murray G. (2022) Evaluating hyaluronic acid dermal fillers: A critique of current characterization methods. *Dermatol Ther.* 35(6):e15453. doi: 10.1111/dth.15453.

Table 18. Summary of Clinical Trials of Hyaluronic Acid Fillers in Dermatology. (Source: Global Data)

The clinical evidence base for HA fillers is broad and multi-brand, with Restylane® and Juvéderm® accounting for the largest share of registered studies across 2008–2025, and smaller but focused programs for Belotero®, Teosyal®, and Revanesse®. The dermatology indication mix centres on wrinkle correction, lip/perioral treatments, and midface volumisation, with more recent work extending to 'skin quality' outcomes. This distribution reflects a mature category with ongoing lifecycle management.

5.4 Calcium Hydroxylapatite (CaHA) Fillers

Calcium Hydroxylapatite (CaHA) is a mineral-based dermal filler, composed of synthetic microspheres (about 25-45 microns in size) of CaHA suspended in an aqueous gel carrier. The compound is chemically similar to the mineral component of bone and teeth. At presentonly FDA-approved CaHA filler on the market is Radiesse® (**Merz Aesthetics**).[98] This filler been described as having a thicker, cream-like consistency compared to HA gels, a characteristic that is stated to contribute to their lifting capacity. The mechanism of action for CaHA fillers is two-fold:

1. **Immediate Effect** – the gel carrier provides initial volume replacement upon injection; this is stated as producing an immediate visible correction of skin wrinkles and folds.
2. **Bio-stimulatory effect** – the CaHA microspheres are reported to act, over time, as a scaffold that induces fibroblast activity and deposition of endogenous collagen around the injection site.

The results of CaHA filler typically last around 12 to 18 months for most recipients, longer than most HA fillers.[99]

Indication / study focus	Trial Nos. (approx.)	Lead Sponsor(s)
Nasolabial folds	~5–6	Merz North America, Inc.
Hand rejuvenation (dorsal hand volume)	~4	Merz North America, Inc.
Jawline contour/volume	2	Merz North America, Inc.
Décolletage wrinkles / skin quality (incl. diluted CaHA)	3–4	Merz North America, Inc.
Perioral & marionette lines	1	Erevna Innovations Inc.
Malar deficiency (cheek flattening)	1	DeNova Research (with Merz Aesthetics)
Combination approaches (device or multimodal injectables)	4	Ulthera, Inc.; Univ. of California, Irvine; Nashville Centre for Laser & Facial Surgery; Main Line Center for Laser Surgery
Mechanistic/tissue response	2	Galderma R&D; Universitätsklinikum Hamburg-Eppendorf

Table 19. Summary of CaHA Filler Clinical Trails, by Indication.
(Source: Trial Data from ClinicalTrials.gov - National Library of Medicine)

[98] www.americanboardcosmeticsurgery.org/procedure-learning-center/non-surgical/injectable-fillers-guide/
[99] Hong & Park (2025), Dual Benefits of Calcium Hydroxyapatite Filler: A Prospective Study on Midface Volume Restoration and Skin Quality Enhancement. *J Cosmet Dermatol,* 24: e70265. DOI: 10.1111/jocd.70265

The CaHA evidence base is concentrated around a core set of aesthetic indications, most prominently nasolabial folds and dorsal hand augmentation, with Merz North America as the primary sponsor across interventional studies. Over time, program scope has broadened to contouring (jawline, malar deficiency) and skin-quality endpoints in the décolletage, including studies of diluted formulations, as well as combination approaches with energy devices or other injectables. The presence of mechanistic and tissue-response work (e.g., histology, gene-expression, imaging interactions) aligns with CaHA's positioning as a biostimulatory filler in addition to a volumizer.

5.5 Poly-L-lactic Acid (PLLA) Fillers

Poly-L-lacticetic, biodegradable polymer that serves as a bio-stimulatory agent, stimulating collagen production and regeneration. Its mechanism of action is based on the stimulation of neo-collagenases, which is initiated by a foreign body response to the injected material. The subsequent cellular inflammatory response activates fibroblasts which in turn produce collagen, which acts as a semi-permanent remedy for facial volume loss [100].

Sponsor / Institution	Trials	Example Indications Studied	Trial Sponsor Description
Galderma R&D	~18	Midface volume loss, nasolabial folds, cheek wrinkles, skin laxity	Dominant sponsor for aesthetic indications
Bausch Health Americas, Inc.	5	Midfacial contour, lipoatrophy, acne scars	Involved in early development and HIV-associated lipoatrophy studies.
Sadick Research Group	3	Nasolabial folds, facial wrinkles, skin aging	Independent clinical dermatology group.
Goldman, Butterwick, Fitzpatrick, Groff	4	Cellulite, temple volume, knee laxity	Multi-centre aesthetic dermatology investigators in US trials.

Table 20. Top PLLA Clinical Trial Sponsors. (Source: Trial Data from ClinicalTrials.gov - National Library of Medicine)

Analysis of the clinical trial sponsor landscape indicates that the evidence base for PLLA is highly concentrated, with Galderma R&D responsible for the majority of interventional studies in aesthetic indications. Early development, including observational trials in HIV-associated lipoatrophy, was led by Bausch Health, but subsequent research has been dominated by Galderma to support regulatory submissions and label expansions of their market leading Sculptra® product. Independent contributions from academic and private dermatology groups remain limited, though they have explored emerging indications such as cellulite, skin laxity, and knee contouring. This pattern suggests that while PLLA's repositioning from reconstructive to aesthetic filler is well-documented, the clinical data remain strongly tied to the commercial sponsor, contrasting with more widely studied filler classes such as HA.

[100] Ao *et al*. (2024) Application of PLLA (Poly-L-Lactic acid) for rejuvenation and reproduction of facial cutaneous tissue in aesthetics: A review. *Medicine (Baltimore).15*;103(11):e37506. doi: 10.1097/MD.0000000000037506.

5.6 Polymethyl-methacrylate Microspheres (PMMA) Filler

Polymethyl-methacrylate (PMMA) is a biocompatible synthetic polymer used in dermal fillers, primarily for the indication of nasolabial fold and atropic acne scaring. PMMA are smooth spherical microspheres which are suspended in a carrier gel. Bellafill® (formerly known as Artefill/ Artecoll) is the only FDA-approved PMMA filler and consists of 20% PMMA microspheres (of 30-50 micron diameter) suspended in 80% purified bovine collagen gel, along with a small amount of lidocaine anaesthetic.

Following injection, the collagen carrier provides an immediate volumizing effect. Over time the collagen is reabsorbed, while the PMMA microspheres remain in situ and elicit a controlled foreign-body response that promotes fibroblast activity and the stimulation of natural collagen production. The PMMA particles do not degrade over time, remaining as a scaffold in the tissue. Bellafill® is approved and regulated as a permanent filler due to the implantation of the microspheres. Studies have shown results lasting at least 5 years for nasolabial fold correction.[101]

Indication / Study Focus	Number (trials)	Lead sponsor(s)
Nasolabial folds	1	Suneva Medical, Inc.
Atrophic acne scars – monotherapy	2	Suneva Medical, Inc.
Atrophic acne scars – combination approach (microneedling + PMMA)	1	Suneva Medical, Inc.
HIV-associated facial lipoatrophy (facial volume restoration)	1	Gerald Pierone, Jr., M.D. (collab: Suneva)
Body contouring (gluteal augmentation)†	2	MTC Medical; LEBON Produtos

Table 21. Summary of PMMA Filler Clinical Trails, by Indication.
(Source: Trial Data from ClinicalTrials.gov - National Library of Medicine)

The PMMA evidence base in aesthetics is relatively compact and indication-focused, with most interventional studies sponsored by Suneva and concentrated in nasolabial fold correction and atrophic acne scarring.

5.7 Autologous Fat Injection (Fat Grafting)

Autologous fat injection, also known as fat grafting or fat transfer, is an injectable method where adipose tissue is harvested from the individual and then reinjected as a volumizing agent. It is the only injectable filler that requires a minor surgical procedure (liposuction) to obtain the material, which is why it is sometimes considered separately from off-the-shelf fillers. In a fat transfer procedure, fat is typically harvested from a donor area of the body (such as the abdomen or thighs) via a small liposuction, processed/purified, and then injected into the face to restore volume. The benefit of fat injection is that it uses natural tissue from the patient, eliminating any risk of allergic reaction or foreign-body issues. Fat that survives the transfer is permanent, so results can be very long-lasting though there is typically some partial loss of volume in the months after injection as not all grafted cells take.

[101] Solomon *et al*. (2021) Facial Soft Tissue Augmentation With Bellafill: A Review of 4 Years of Clinical Experience in 212 Patients. *Plast Surg.* 29(2):98-102. DOI: 10.1177/2292550320933675

5.8 Other Emerging or Niche Injectables

Beyond the mainstream categories above, there are emerging or niche injectable treatments in the facial aesthetics arena worth noting. These either represent new products in development or less common injectable therapies that are used for special indications:

- **Polycaprolactone (PCL) Fillers:** Polycaprolactone is an emerging biodegradable polymer used in a newer class of collagen-stimulating filler. The prime example is Ellansé® (**Sinclair Pharma**), available in Europe and Asia. Ellansé® consists of smooth PCL microspheres in a carboxymethylcellulose gel, it works similarly to PLLA by stimulating collagen. It provides an immediate fill and long-term collagenesis. Different versions of Ellansé® are formulated to last 1 to 4 years depending on polymer chain length.[102] This is longer than Sculptra®, making Ellansé® one of the longest-lasting injectables on the market. The popularity of Ellansé® signals a consumer trend towards longer-lasting fillers which require less frequent injections.

- **"Liquid Facial Lift" Combinations:** Some new products are focusing on combination injectables, such as mesotherapy cocktails, where mixtures of vitamins, amino acids, and a small amount of HA are injected superficially to improve skin quality (e.g. products like Jalupro®, or PRP+HA blends).[103] These border on cosmetic skin treatments rather than structural fillers, but represent a niche of injectables aimed at skin revitalization rather than filling or paralysing muscles.

[102] Angelo-Khattar (2022) Objective Assessment of the Long-Term Volumizing Action of a Polycaprolactone-Based Filler. *Clin Cosmet Investig Dermatol*. 28;15:2895-2901. DOI: 10.2147/CCID

[103] Kandhari *et al*. (2020) *Mesococktails and mesoproducts in aesthetic dermatology*. Dermatol Ther. DOI: 10.1111/dth.14218

6 Deals

6.1 Background

A combination of internet-based searching and deal information from subscription databases was used to collate information on collaborations, licensing agreements, investments and acquisitions in the aesthetic injectables sector.

In recent years, there has been a surge of investment interest and M&A activity in the medical aesthetics space.[104] This proliferation of aesthetics-focused businesses has created a hyper-fragmented business landscape.[105] Private equity is a relatively new stakeholder in the aesthetics ecosystem and has already invested billions of dollars to consolidate the market which is still very early in its investment cycle. This new phase of aesthetic medicine has generated opportunities for business owners looking to monetise all or some of their equity and/or accelerate their business's growth trajectory through strategic partnerships.

The drivers in consolidation of the medical aesthetics space include:

1. A rising demand for aesthetic services

There is a growing consumer demand for non-invasive cosmetic procedures such as Botox and dermal filler, owing to ageing populations, increasing social media influence, and greater societal acceptance of aesthetic treatments. As the market continues to expand, private equity firms will identify opportunities for growth and profitability in acquiring and consolidating businesses.

2. Recurring revenue and high margins

Medical aesthetic businesses frequently generate recurring revenue through membership programs, subscription services, and repeat client visits, and so typically enjoy high margins owing to the premium pricing of their services and products. This combination of steady cash flow and high profit margins make these businesses appealing to private equity investors looking for stable investments.

3. Fragmented market with consolidation opportunities

The medical aesthetic sector is highly fragmented, and composed of many small, independently owned businesses. Private equity firms are attracted to this fragmentation as it presents significant opportunities for consolidation to create economics of scale, streamlined operations and a stronger marker presence.

[104] https://physiciangrowthpartners.com/white-paper/state-of-medical-aesthetics-private-equity-fall-24/
[105] www.providenthp.com/expertise/investment-consolidation-in-the-aesthetic-medicine-sector/

6.2 Deals in the Aesthetic Injectables Space

6.2.1 Total Deals

The below table provides information on aesthetic injectables and dermal filler deals by geography.

Region	Total Deal Count	Total Deal Value (US $m)	Year-on-year (volume) (%)
North America	84	24,649	0
Europe	47	115,645	+43
Asia-Pacific	45	2,958	-36
Middle East & Africa	5	82	0
South and Central America	4	75	-100

Table 22. Aesthetic Injectables and Dermal Filler Deals by Geography (Source GlobalData)

- North America leads in terms of total deal count, with 84 transactions amounting to $24.6 billion, though its market activity has remained flat year-on-year.
- Europe, despite having almost half the number of deals, far surpasses all other regions in deal value at $115.6 billion. Europe also shows the most robust growth in deal activity, with a 43% increase in volume compared to the previous year.
- Asia-Pacific recorded a comparable number of deals but significantly lower total value ($3.0 billion), accompanied by a steep 36% drop in volume.
- The Middle East & Africa and South and Central America remain relatively inactive, with only a handful of deals and minimal investment values. Notably, South and Central America saw a complete halt in year-on-year deal growth (-100%).
- Overall, the data suggests a concentration of high-value deals in Europe, stability in North America, and weakening activity in emerging markets, pointing to a more polarised global market in aesthetic injectables and dermal fillers.

We collated the total deals that have taken place in the aesthetic injectables and dermal filler market by count and value, as shown in the below table.

Deal Type	Total Deal Count	Total Deal Value (US $m)	Year-on-year (volume) (%)
Equity Offering	35	26,782	-5
Partnership	32	228	-100
Debt Offering	29	24,625	-64
Venture Financing	26	181	-100
Acquisition	22	89,290	0
Private Equity	10	262	-100
Asset Transaction	6	1,446	0
Grant	2	2	0
Merger	2	2	0
Licensing Agreement	1	261	0

Table 23. Aesthetic Injectables and Dermal Filler Deals by Count and Value (Source GlobalData)

- Acquisitions account for the highest total deal value at $89.3 billion across 22 deals, although despite a 0% year-on-year volume change, the high value suggests these are large-scale transactions involving major industry players.

- Equity offerings are the most frequent deal type, with 35 deals totalling $26.8 billion, however, they experienced a slight 5% decline in volume, suggesting a modest contraction in investor appetite or fewer companies going to the public markets.

- Debt offerings, with 29 deals worth $24.6 billion, saw a significant 64% year-on-year volume decline, possibly reflecting tighter credit conditions or a strategic shift away from debt financing in the sector.

- While partnerships and venture financing were relatively common with 32 and 26 deals respectively, both saw a 100% drop in year-on-year volume, pointing to a complete halt or significant slowdown in early-stage collaborations and funding rounds.

- Private equity deals (10 deals, $262 million) also experienced a 100% decline in volume, indicating a sharp pullback by private equity firms in this space, potentially due to valuation concerns or shifting investment priorities.

- Smaller categories such as asset transactions (6 deals, $1.4 billion), grants (2 deals, $2 million), mergers (2 deals, $2 million), and licensing agreements (1 deal, $261 million) showed no year-on-year change.

6.2.2 Notable Deals

We have curated examples of deals in the injectable aesthetics space in the past five years, as shown in the table below.

Completed Date	Headline	Deal Type	Value (US $m)
March 2025	Vivacy Paris (Laboratoires Vivacy) Acquires Stake in Burgeon Biyoteknoloji ve Sanayi Ticaret	Acquisition	-
February 2025	Crown Laboratories Acquires Revance Therapeutics for $924 Million	Acquisition	924
August 2024	L'Oreal to Acquire 10% Stake in Galderma	Acquisition	N/A
March 2024	Volumina Medical Raises $21 Million in Series A Financing	Venture Financing	21
March 2024	Galderma Raises $2.48 Billion in IPO of Shares	Equity Offering	2,488.9
December 2023	Evolus Enters into Licensing Agreement with Symatese	Partnership	30.8
December 2022	Bohus Biotech Raises $8.13 Million in Venture Financing	Venture Financing	8.1
May 2020	AbbVie Acquires Allergan	Acquisition	85,737.2

Table 24. Notable Deals in the Injectable Aesthetics Space 2020-2025 (Source GlobalData)

- The landmark acquisition of **Allergan** by **AbbVie** in May 2020 for $85.7 billion stands out as a pivotal moment for the injectables aesthetics space, consolidating control over Botox® and establishing **AbbVie** as the dominant force in both aesthetic and therapeutic botulinum markets. This deal also set the tone for future consolidation in the space, as large pharmaceutical players began to view aesthetics as a high-margin, cash-pay growth area.

- More recently, **Crown Laboratories'** (UK) acquisition of **Revance Therapeutics** for $924 million reinforces this consolidation trend, and is the deal of the largest value. **Revance** represents a strategic asset for **Crown** as it expands its footprint in the injectable neurotoxin segment, and signals continued interest in differentiated products.

- Further, **Vivacy's** (France) acquisition of a strategic stake in **Burgeon Biyoteknoloji ve Sanayi Ticaret** (Türkiye) is of a smaller value, but reflects growing global interest and collaboration.

- There has been a marked increase in capital raising activity, demonstrating strong investor confidence in the long-term potential aesthetics. For instance, **Galderma's** $2.48 billion IPO in March 2024 and **L'Oréal's** minority acquisition of a 10% stake in **Galderma** in August 2024. This latter deal highlights a broader trend of convergence between consumer beauty and medical aesthetics, blurring the lines between the two sectors.

- At the earlier stages of the investment cycle, companies like **Volumina Medical** (a biomaterials Med-tech start up, Switzerland) and **Bohus Biotech** (a HA-focused biotechnology company, Sweden) have successfully raised venture funding, $21 million and $8.1 million, respectively. These financings suggest that investors are actively supporting innovation in new biomaterials and tissue regeneration.

- Partnership activity has also played a key role in recent strategic moves. **Evolus** (US), for example, entered into a licensing agreement with **Symatese** (France) in December 2023

- Altogether, these deals highlight several important themes shaping the injectable aesthetics space. First, the market is consolidating rapidly, with a few dominant players acquiring key assets to expand their portfolios. Second, traditional beauty companies are moving into the clinical aesthetics space, signalling a convergence of consumer and professional segments. Third, both late-stage and early-stage capital markets remain active, with strong investor appetite across the value chain. Lastly, companies are increasingly using partnerships to accelerate growth and enter new markets.

We have reviewed the top venture capital investments by value, as shown in the below table.

Investor	Location	Deal Description	Total Deal Value
Emerald Development Managers	US	LifeSprout Raises $28.5 Million in Series A Financing (April 2020)	$28.5 million
IDG Capital; Shanghai Chengshu Investment Management Co; Woyong Fund	China	Weimu Medical Secures Over $14 Million in Series A Financing (December 2023)	$14.0 million
BoxOne Ventures; Break Off Capital; Capital Angel Network; Horizons Ventures	Canada UK Canada Hong Kong	Spiderwort Raises $13.2 Million in Series A Financing (July 2022)	$13.2 million
AngelMD Management; Ginkgo Investment Group	US China	LifeSprout Raises USD6.5 Million in Seed Financing (May 2019)	$6 million

Table 25. Top Venture Capital Investments in Aesthetic Injectables and Dermal Fillers By Value (Source GlobalData)

- North America, particularly the US and Canada, emerged as a strong hub, both in terms of investor presence and target companies. China also stands out as a significant player, with multiple firms involved in sizable investments.

- Despite the diversity of investors and locations, it's notable that all listed investors made only one investment each in this dataset, suggesting these were selective, high-conviction bets rather than part of broader portfolio strategies.

- Overall, the data suggests that North America, China, and select Asian investors remain key players in funding emerging medical and biotech ventures, with Series A rounds being the dominant stage of capital infusion.

We reviewed the top private equity investments by value, as shown in the below table.

Investor	Location	Deal Description	Total Deal Value
InvAscent; Morgan Stanley Private Equity Asia	India Hong Kong	Maiva Pharma Raises $119.8 Million in Private Financing (May 2024)	$119.8 million
EW Healthcare Partners	US	Essex Woodlands Invests $25 Million in Suneva Medical	$25 million
Yuanta Investment Co Ltd	Taiwan	GCS Raises $15.2 Million in Private Equity (April 2023)	$15 million
Aurea Holding Limited	UK	Aurea Group Invests in Persimmon Life (May 2025)	-
Charterhouse Capital Partners LLP	UK	Charterhouse Invests in Skin Tech Pharma Group (June 2024)	-
Nept Holdings Sarl	Luxembourg	Nept Holdings Acquires Minority Stake in ITP	-

Table 26. Top Private Equity Investments in Aesthetic Injectables and Dermal Fillers By Value (Source GlobalData)

- Notably, there is a strong focus on healthcare and life sciences, with significant deals involving companies such as **Maiva Pharma** (India), **Suneva Medical** (US), and **Skin Tech Pharma Group** (Spain). This trend highlights investors' continued interest in sectors that offer long-term growth potential, driven by factors such as aging populations, innovation in biotech and therapeutics, and heightened global health awareness.

- The $119.8 million raised by **Maiva Pharma** is a standout deal which contradicts the trend of declining investment in Asia, although specific aesthetic markets such as India and South Korea are showing growth, but not enough to offset the drag.

6.3 Future Deals

In January 2025, **Teoxane** submitted a superior proposal to acquire **Revance Therapeutics** for $3.60 per share in cash.[106] **Teoxane's** offer comes as a direct challenge to **Revance's** amended merger agreement with **Crown Laboratories**, announced in December 2024, and represents a 16% premium over the previously amended and restated deal with **Crown Laboratories**, which was valued at $3.10 per share.[107] That revised agreement saw the takeover price slashed from an initial $6.66 per share to $3.10, causing **Revance's** stock to drop by 21%.

This acquisition is more than a financial transaction as it reflects **Teoxane's** broader strategy to solidify its global leadership in medical aesthetics. With this deal, **Teoxane** aims to strengthen its presence in the American market while leveraging **Revance's** established platform for growth.

[106] www.prnewswire.com/news-releases/teoxane-sa-announces-superior-proposal-to-acquire-revance-therapeutics-for-3-60-per-share-in-cash-302342992.html
[107] https://business-news-today.com/revance-therapeutics-stock-soars-16-as-teoxane-proposes-360m-deal/

7 Market Drivers & Trends

The facial injectables market is shaped by several important **trends, growth drivers, and challenges**. In this section, we identify major trends in consumer behaviour and industry activity, discuss factors propelling market expansion, and examine the constraints that could impede growth.

7.1 Key Trends

Mainstream Acceptance and Social Media Influence

A major trend in the facial injectables market, is the normalisation of cosmetic injectables across broader demographics and the impact of social media in driving awareness. What previously was viewed as a luxury for celebrities or wealthy individuals is now increasingly common among mainstream consumers, including younger age groups and men. Social media has dramatically increased acceptance of aesthetic treatments, platforms like Instagram, TikTok, and Facebook expose millions to cosmetic “before-and-afters” and injectable procedure testimonials. According to McKinsey & Company, online conversations about neuromodulators grew fivefold from 2010 to 2020 (and eightfold for fillers). Notably, over 60% of Twitter mentions of injectables are from people under 25, and a similar share are from men, indicating that digital media is engaging new customer segments. [108]

Expanding Provider Networks and Accessibility

Alongside growing consumer interest, the availability of aesthetic injectable services has proliferated. In many regions, there has been a boom in med-spas, cosmetic dermatology clinics, and even non-traditional outlets offering injectables (such as some dental clinics or “beauty bars”). According to McKinsey & Company between 2017 and 2021, more than 400 new aesthetic clinics and centres worldwide, raised substantial investment (over $3.1 billion) to expand their operations.[109]

This trend reflects two dynamics: consolidation (the rise of large clinic chains) and fragmentation (many new independent providers entering the field). The growth in access can be seen in several rapidly growing markets This greater availability of trained injectors and clinics has lowered barriers for patients to get treatments, fuelling market growth.

Diversification of Customer Demographics

The profile of the typical injectable patient is broadening beyond the traditional core market. One noteworthy trend is the surge in male consumers seeking cosmetic injectables. Globally, men still represent a minority of cosmetic injectable users, but their share is growing. According to figures from the International Society of Aesthetic Plastic Surgery approximately 16 % of nonsurgical cosmetic procedures in 2024 were performed on men; a figure that has been rising year over year. Men are increasingly using Botox to soften frown lines or jawlines, motivated by both professional appearance

[108] www.mckinsey.com/industries/life-sciences/our-insights/from-extreme-to-mainstream-the-future-of-aesthetics-injectables

standards and personal care. Providers are actively marketing to this segment, which is expected to further boost male uptake.[110]

At the same time, younger consumers (late 20s to early 30s) are turning to injectables for preventative ageing. [111] Surveys indicate that in some markets the core aesthetic injectable demographic is considerably younger than in the West, for example in China figures show that in 2020, 61% of cosmetic surgeries were on individuals aged 16-25.[112] Overall, the pool of users now spans a wider age and gender range than before. This broadening demographic base is a positive indicator for sustained market growth, as it adds new first-time consumers on top of repeat treatments.

Product Innovation and Next-Generation Injectables

A significant trend on the supply side is the continuous innovation in injectable products to improve longevity, safety, and ease of use. Manufacturers are investing heavily in R&D for the "next generation" of toxins and fillers. One innovation is longer-acting neuromodulators, such as **Revance's** DaxibotulinumtoxinA (Daxxify®), approved in 2022, which is stated to last six plus months. On the filler side, novel bio-stimulatory materials are becoming more popular, offering longer-lasting volume by stimulating collagen production. Additionally, techniques and devices around injectables are improving, from blunt microcannulas that reduce bruising, to injection assist devices, and research into needle-free injection systems for fillers. These advances tend to attract new customers and encourage existing ones to continue treatments, thus supporting market growth.

7.2 Barriers to Growth

Despite positive trends, the facial injectable market faces several **barriers and constraints** that could temper its growth:

Regulatory and Legal Hurdles

Regulatory frameworks around cosmetic injectables can be restrictive, varying widely by country. In many markets, only licensed medical professionals can administer injectables, which is appropriate for safety but can limit accessibility and growth in underserved areas. Some countries have stringent approval processes for new toxin or filler products, slowing the entry of innovative solutions. In markets with weaker regulation, an opposite problem exists: the proliferation of unapproved or low-quality injectables can undermine consumer confidence and pose safety risks.

Safety Concerns and Side Effects

Injectable aesthetic treatments are not without risks, and fear of side effects can deter potential customers. Common side effects like pain, bruising, swelling, or redness at injection sites are usually mild, but they contribute to the perception of injectables as invasive. More seriously, there are rare but severe adverse events such as unintentional injection of filler into a blood vessel which can cause

[110] www.plasticsurgery.org/news/blog/brotox-what-is-it-and-why-is-it-popular
[111] Haykal *et al*. (2023) Prejuvenation: The Global New Anti-Aging Trend. *Aesthetic Surgery Journal Open Forum*. 5:ojad061. DOI: 10.1093/asjof/ojad061
[112] www.economist.com/china/2021/05/08/why-so-many-young-chinese-seek-plastic-surgery

vascular occlusion leading to skin necrosis or blindness. News of such complications may make some prospective users hesitant.

Competition from Alternative Treatments

Facial injectables, while hugely popular, do face competition from alternative aesthetic interventions. Some consumers choose surgical solutions (like a facelift or eyelid lift) for more permanent results rather than doing repeat filler sessions. Others may opt for energy-based devices and skin therapies (laser resurfacing, radiofrequency microneedling, ultrasound tightening) to address wrinkles and sagging without any injections. Although none of these alternatives are likely to replace aesthetic injectables' entirely, they compete for the same pool of consumers and wallet share.

Temporary Results and Maintenance Needs

Most facial injectable treatments provide temporary improvements, which can be seen as a disadvantage by some consumers. Dermal fillers typically last six to 18 months (depending on type and area) and the effects of botulinum toxin wear off in three to four months. This means consumers must return regularly for repeat treatments to maintain results, incurring ongoing costs and inconvenience, the need for maintenance may dissuade a portion of would-be clients.

7.3 Growth Drivers

Counterbalancing the barriers are powerful **drivers of growth** that are propelling the facial injectables market upward. These drivers are demographic, economic, social, and technological in nature:

Ageing Population and Demographic Tailwinds

Perhaps the largest growth driver is the growing global population in the age brackets that seek aesthetic rejuvenation. The world's population is not only expanding but also ageing. By 2050, one in six people globally will be over age 65 (up from one in 11 in 2019).

Rising Disposable Incomes and Spending on Aesthetics

Hand in hand with ageing is the economic ability to spend on elective procedures. Over the past decades, many regions have seen a strong rise in middle-class and affluent consumers with disposable income for self-care.

Preference for Minimally Invasive Procedures

A significant cultural shift in medicine and beauty is the preference for minimally invasive or non-surgical treatments over traditional surgery. Modern consumers often seek results with minimal downtime, lower risk, and less pain, which is exactly what injectables promise. Over the past decade, the number of minimally invasive cosmetic procedures has skyrocketed, far outpacing surgical procedures.

Clinical Efficacy and Continuous Improvements

Another driver is the noticeable aesthetic improvements that facial injectables deliver which satisfy consumers. The high efficacy and repeatable results of modern injectables lead to strong word-of-mouth and high repeat rates. Users of facial injectable treatments who are happy with volume restoration or wrinkle reduction are likely to return for maintenance and consider additional procedures, creating a compounding effect in demand. Additionally, as aesthetic injectable products continue improving (e.g. longer lasting fillers, more targeted injection techniques), which in turn further increases patient satisfaction.

8 Regulatory Landscape

8.1 Overview

The global aesthetics industry which comprises medical aesthetic devices, injectables, and minimally invasive procedures, continues to expand, but achieving commercial viability depends not only on product innovation but also on comprehensive alignment with regional regulatory frameworks.[113] Devices such as lasers, radiofrequency systems, HA fillers, botulinum toxins, and body contouring systems are typically categorised as medical devices, although their applications, claims, and classification vary significantly by jurisdiction.

In contrast to traditional pharmaceuticals, aesthetic products often occupy an intersectional regulatory space – neither exclusively cosmetic or fully therapeutic.

In this section, we provide a broad overview of the aesthetic injectable regulations in US, Europe, and Asia.

8.2 US

In the US, the FDA governs aesthetic products under the Center for Devices and Radiological Health (CDRH) and the Center for Drug Evaluation and Research (CDER), depending on product characteristics.

8.2.1 Dermal Fillers

Before a cosmetic injectable can be marketed in the US, it must go through a pre-market approval process, and once approved its safety is monitored through post-market surveillance.[114] Aesthetic devices may be regulated by the FDA depending upon their intended use and whether they impact the structure or function of the body.

Under the FDA's regulations, aesthetic (cosmetic) devices include dermal fillers, which are regulated as medical devices, which can be categorised as into Class I (low risk), Class II (moderate-risk), or Class III (high risk).

The device classification regulation defines the regulatory requirements for a general device type.[115] The investigational device either undergoes a review process by the FDA or is deemed exempt from review, depending on the device class and what types of similar devices are already on the market.

- Most Class I and certain Class II devices are exempt from FDA review if they are extremely low risk or very similar to existing devices. These exempt devices still must meet all manufacturing and quality control standards.

[113] https://icrowdresearch.com/2025/06/06/how-aesthetics-regulatory-landscape-considered-a-strategic-blueprint-for-its-market-access-latest-mrfr-brief-2025/
[114] https://emmainternational.com/how-the-fda-regulates-cosmetic-injectables/
[115] Jin (2014) FDA Authorization of Medical Devices. JAMA. 311(4):435. DOI:10.1001/jama.2013.286274

- Class II devices typically go through the 510(k) review process, which evaluates whether the new device is "substantially equivalent" to an existing marketed device. 510(k) reviews generally do not require clinical trials to demonstrate substantial equivalence. A 510(k) is a premarket submission made to FDA "to demonstrate that the device to be marketed is as safe and effective, that is, substantially equivalent, to a legally marketed device", the predicate device.
- Manufacturers of Class III devices submit a premarket approval (PMA) application, and the FDA decide whether the new device is safe and effective for treating a specific disease or condition. The PMA process must include results from clinical studies. For minor modifications to existing Class III devices, PMA supplements are submitted instead of a full PMA.

The US classifies absorbable dermal fillers, such as HA and PLLA, as Class III medical devices, and stipulates that these fillers should be classified as "implants" in regulatory text as they are intended to remain within a cavity of the body for 30 days or more.[116]

The FDA has approved dermal fillers for use in adults 22 years of age or older (over the age of 21) for specific uses:[117]

- Absorbable (temporary) fillers are approved for moderate to severe facial wrinkles and skin folds, such as nasolabial folds (lines extending from the sides of the nose to the edges of the mouth) and perioral lines (small wrinkles in the skin around the mouth and lips).
- Augmentation (increased volume) of lips, cheeks, chin, and back of the hand.
- Non-absorbable (permanent) fillers are approved for only nasolabial folds and cheek acne scars.
- The restoration and correction of signs of facial fat loss (lipoatrophy) in people with human immunodeficiency virus (HIV).
- Correction of contour deficiencies, such as wrinkles and acne scars.

8.2.2 Botox®

Whereas BOTOX® Cosmetic has been approved by the FDA as a drug, indicated in adults for the temporary improvement in the appearance of:[118]

- Moderate to severe glabellar lines associated with corrugator and/or procerus muscle activity
- Moderate to severe lateral canthal lines associated with orbicularis oculi activity
- Moderate to severe forehead lines associated with frontalis muscle activity
- Moderate to severe platysma bands associated with platysma muscle activity for injection, for intramuscular use

[116] Allen & Doudou *et al*. (2024) Current Knowledge and Regulatory Framework on the Use of Hyaluronic Acid for Aesthetic Injectable Skin Rejuvenation Treatments. *Cosmetics*. 11(2): 54. DOI: 10.3390/cosmetics11020054
[117] www.fda.gov/medical-devices/aesthetic-cosmetic-devices/dermal-fillers-soft-tissue-fillers
[118] www.accessdata.fda.gov/drugsatfda_docs/label/2024/103000s5316s5319s5323s5326s5331lbl.pdf

8.3 Asia – China

In China, all invasive injectables are classified as class III medical devices under the Medical Devices Supervision and Administration Regulation (MDSAR), based on the longevity of the filler, the method of delivery (injection), and the ability of the dermal filler to be absorbed by the human body.[119] Currently, dermal fillers that have been registered in China are classified into four types:[120]

- **Collagen dermal filler**

The raw materials of collagen dermal filler are mainly made from animal skin, and currently animal source medical devices in China belong to the high-risk category, and the CFDA hold a strict attitude and approval to said products, considering both the safety of the animal source but also its biocompatibility to the human body.

- **HA dermal filler**

The HA filler approval by the CFDA is more mature, with comprehensive national standards and guidelines. Currently, HA fillers are classified as Class III implantable medical devices and is under the critical regulatory supervision of the CFDA.

- **Non-absorb dermal filler**

This product is non-absorbed product and belongs to Class III implantable medical devices, as it requires for high biocompatibility and stability after being implanted into the human body.

- **Botox dermal filler**

At present Botox® is mainly managed as drug in China and so its registration is handled in accordance with the provisions of the drug registration measures.

8.4 Asia - South Korea

In South Korea, aesthetic medicine is primarily regulated under general medical laws rather than specific legislation dedicated to aesthetic procedures.

Key regulations include the Cosmetics Act 2018, Cosmetics Regulatory Framework 2019, and Medical Services Act 2016.

The Cosmetic Act mainly focuses on products designed for skincare, cleansing, and beautification, but excludes medical aesthetic products such as Botox, fillers, and implants.

Likewise, the Cosmetic Regulatory Framework is geared towards general consumer-level cosmetic products rather than medical-grade aesthetic solutions. The Medical Devices Act 2016 is broader in scope, encompassing a wide range of medical services; however, it does not specifically address aesthetic practices, nor is it exclusive to them, resulting in a regulatory gap for this specialised area.

[119] https://english.nmpa.gov.cn/2022-09/30/c_817421.html
[120] www.cirs-group.com/en/md/what-are-types-of-dermal-fillers-registered-in-china-amp-how-they-perform

8.5 Europe

8.5.1 Dermal Fillers

In Europe, dermal fillers are regulated under the recent Medical Device Regulation (EU MDR 2017/745), which provides a framework for compliance, including requirements for clinical evaluation and post-market surveillance.[121] Similar to the US, medical devices, which can be categorised as into Class I (low risk), Class IIa (moderate-risk), Class IIb (higher-risk) or Class III (highest-risk).[122] In the EU, products must carry the CE mark, indicating they meet the necessary safety and performance requirements.

The EU's shift from the Medical Device Directive (MDD) to Medical Device Regulation (EU MDR 2017/745) has significantly impacted aesthetics manufacturers and buyers. As, facial fillers will most likely be in the body for more than 30 days, the EU MDR defines this as 'long term use', and as they will most likely will be wholly or mainly absorbed into the body, and so are typically regulated as Class III medical devices, the highest risk class.[123,124]

8.5.2 Botox®

Botox® is not considered as a medical device according to EU legislation, and instead falls under the legislation on medicinal products, which provides that products cannot be marketed unless they are authorised on the basis of quality, safety and efficacy.[125] Botox® has been authorised as a medicinal product in the EU since 1994.

8.6 UK

8.6.1 Prescribing Regulations

In 2021, the UK aesthetics industry was called a "wild west" by Members of Parliament, but since then there have been signs that new aesthetics regulations will be introduced in the UK in the near future.[126]

In 2022, an amendment to the Health and Care Bill gave the Health Secretary the power to introduce a national licensing scheme for practitioners offering non-surgical treatments in the UK. At present, only a small number of local authorities (including in London, Birmingham, and Essex) operate their own cosmetics licensing schemes which vary in the number and type of treatments that they cover.

In 2025, new prescribing regulations were introduced which changes stem from unified guidance from the General Pharmaceutical Council, General Medical Council, and the Nursing and Midwifery

[121] https://e-fillers.com/blog/understanding-regulatory-compliance-for-dermal-fillers-key-considerations-for-clinics-and-distributors#:~:text=Similarly%2C%20in%20Europe%2C%20dermal%20fillers%20are%20regulated%20under,including%20requirements%20for%20clinical%20evaluation%20and%20post-market%20surveillance
[122] Malvehy (2021) New regulation of medical devices in the EU: impact in dermatology. JEADV. 36(3): 360-364. DOI: 10.1111/jdv.17830
[123] https://naala.nl/facial-fillers-as-a-medical-device/
[124] www.oireachtas.ie/en/debates/question/2024-03-20/1378/
[125] www.europarl.europa.eu/doceo/document/E-8-2016-004829-ASW_EN.html
[126] www.policybee.co.uk/blog/a-guide-to-aesthetics-regulations-uk

Council, all of whom have revised their stance to reflect increasing concerns over patient safety in remote prescribing models.[127] As of January 2025:

- All providers of Botox® and dermal fillers will be required to obtain a mandatory licence.
- Practitioners must prove qualifications, complete accredited training, and hold suitable insurance.
- Advertising regulations will be stricter, prohibiting before-and-after images targeting individuals under 18 and banning misleading or exaggerated claims.
- Strengthened consent protocols and thorough medical history assessments will become standard practice.[128]

Notably, recent legislative developments include proposed plans for a national licensing scheme for non-surgical cosmetic procedures in England.[129] The aim is to enhance patient safety by making it illegal for unlicensed practitioners to offer dermal fillers and similar treatments. Moreover, since October 2021, it has been illegal to administer said treatments to anyone under the age of 18, which reflects growing concerns about the impact of cosmetic treatments on young people.

However, currently there are no legal requirements for administering non-surgical aesthetic treatments, meaning that an aesthetics licence is not required.

8.6.2 Dermal Fillers

Dermal fillers have been classed as a medical device in the UK since May 2020.[130] Medical devices are regulated by UK government through its Medicine and Healthcare products Regulatory Agency (MHRA).[131] Under the Northern Ireland Protocol, different rules apply in Northern Ireland to those in Great Britain (England, Wales and Scotland). Devices are regulated under the Medical Devices Regulations 2002 (SI 2002 No 618, as amended) (UK MDR 2002) which, prior to the end of the transition period (following the UK's departure from the EU), gave effect in UK law to the directives listed below:

- Directive 90/385/EEC on active implantable medical devices (EU AIMDD)
- Directive 93/42/EEC on medical devices (EU MDD)
- Directive 98/79/EC on in vitro diagnostic medical devices (EU IVDD)

UK medical devices are classified into the same four classes as specified by the EU MDR.

Northern Ireland follows the current EU Medical Device Regulation and its additional directives.

[127] www.acquisitionaesthetics.co.uk/blog/new-uk-prescribing-rules-2025-aesthetic-law-update/
[128] www.londonroadclinic.com/post/new-regulations-for-aesthetic-injectables-what-you-need-to-know-in-2025#:~:text=From%202025%2C%20following%20a%20landmark%20decision%20by%20the,toxin%20remotely%E2%80%94face-to-face%20consultations%20will%20be%20mandatory%20before%20treatment
[129] https://valuebeautytipsuk.com/navigating-the-world-of-dermal-fillers-safety-regulation-and-best-practices-in-the-uk/
[130] www.harleyacademy.com/aesthetic-medicine-articles/brexit-and-the-uk-aesthetic-medicine-industry/
[131] www.harleyacademy.com/aesthetic-medicine-articles/stricter-regulation-of-dermal-fillers-by-mhra/

The UK Conformity Assessed (UKCA) marking is a UK product marking used for certain goods, including medical devices, being placed on the Great Britain (England, Wales and Scotland) market (and is not recognised in the EU, EEA, or Northern Ireland markets).

8.6.3 Botox®

In the UK, Botox® is a prescription-only medicine and can only be prescribed by doctors, dentists, nurse independent prescribers, pharmacist independent prescribers, or supplementary prescribers.[132]

However, who can inject Botox® is not regulated in the UK and the following groups can inject Botox®: the prescriber, a qualified medical professional under the prescriber's instruction, and a non-medic under the prescriber's instruction.

In some cases, Botox® may be legally used off-label for aesthetic or medical conditions that are not approved by regulatory bodies.

[132] https://smileworks-hub.co.uk/free-resources-news/who-can-inject-botox/

9 Patent Analysis

9.1 Strategy

This section gives an overview of the landscape in relation to patenting activity in the facial injectable space. Analysing the patent landscape and in particular how it has evolved over time, can give us insights into where the facial injectable market is heading into. Using the proprietary patent landscaping tool Orbit Intelligence (Questel), we have looked at how the key players, geographical markets, and technologies being patented have evolved in the last 20 years.

The following search was performed across titles, abstracts, claims, independent claims, object of the invention, advantages, and keywords:

(FACIAL INJECT+) OR (FACIAL FILLER+) OR (DERM+ FILLER+) OR (COSMETIC FILLER+)/TI/AB/CLMS/OBJ/ADB/ICLM/KEYW

This search generated 2508 patent families.

9.2 Filing Trends Over Time

The patent landscape by first publication year relating to dermal/facial injectables has grown over the past 20 years, increasing twelve-fold from 18 in 2005 and peaking at 217 in 2022, as shown in the below figure. This sustained growth is indicative of a maturing yet still dynamic market, highlighting sustained innovation and heightened commercial interest. The steep rise post-2010 aligns with the global boom in medical aesthetics and a growing middle-class demand for cosmetic enhancements.

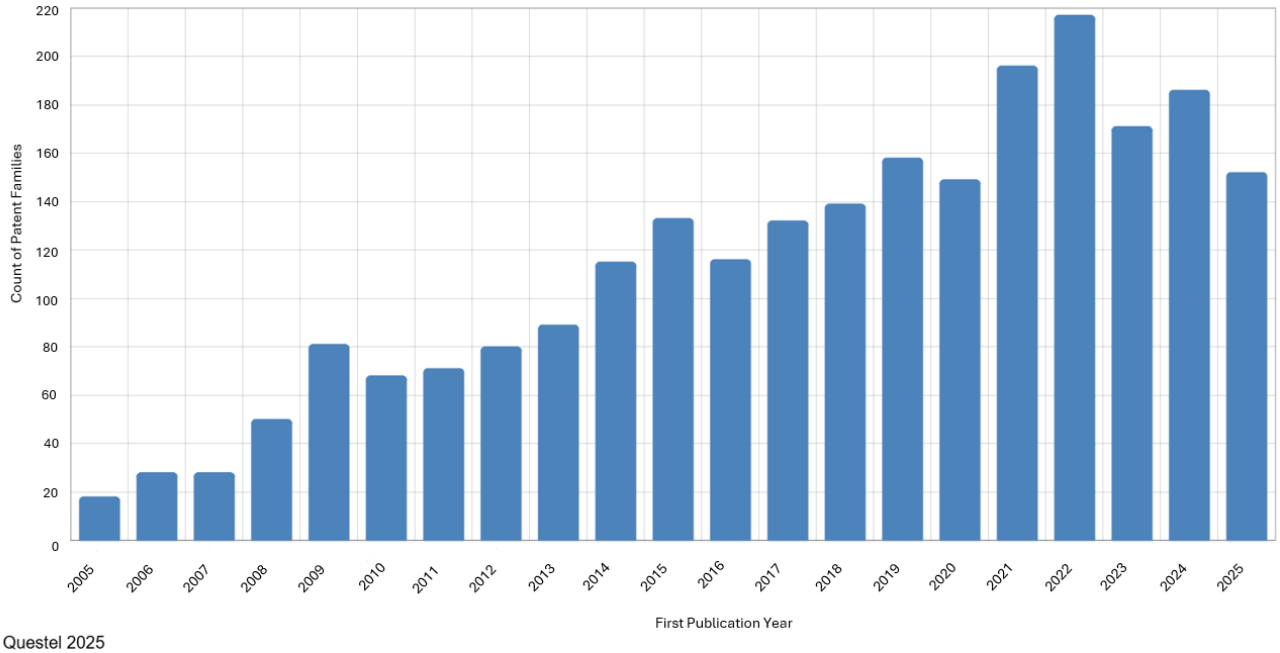

Figure 4. Patent Families by First Publication Year (Source: Orbit)

It does not appear that the COVID-19 pandemic had any significant ramifications, as in 2021 and 2022 publication demonstrated strong growth likely due to the continuation of R&D investments during lockdowns among other factors. Although there was a modest decrease in 2023, which may reflect a short-term stabilisation following rapid growth.

The figures for 2025 are not yet complete due to the 18-month delay between filing of a patent application and its publication.

9.3 Priority Country

The top priority countries can be analysed to see where the patent applications are initially filed and claiming their priority from. This can be a good indication of the countries where the majority of research and innovation in a particular technology field is taking place, since organisations generally file patent applications first in the local territories where their research bases are located. Likewise, for universities the priority country will usually tend to be the country in which they are based.

In this instance, the landscape is dominated by the US, which accounts for approximately 40% of all patent families, followed by China (~25%), South Korea (~11%), and Europe (~6%), as shown in the below figure.

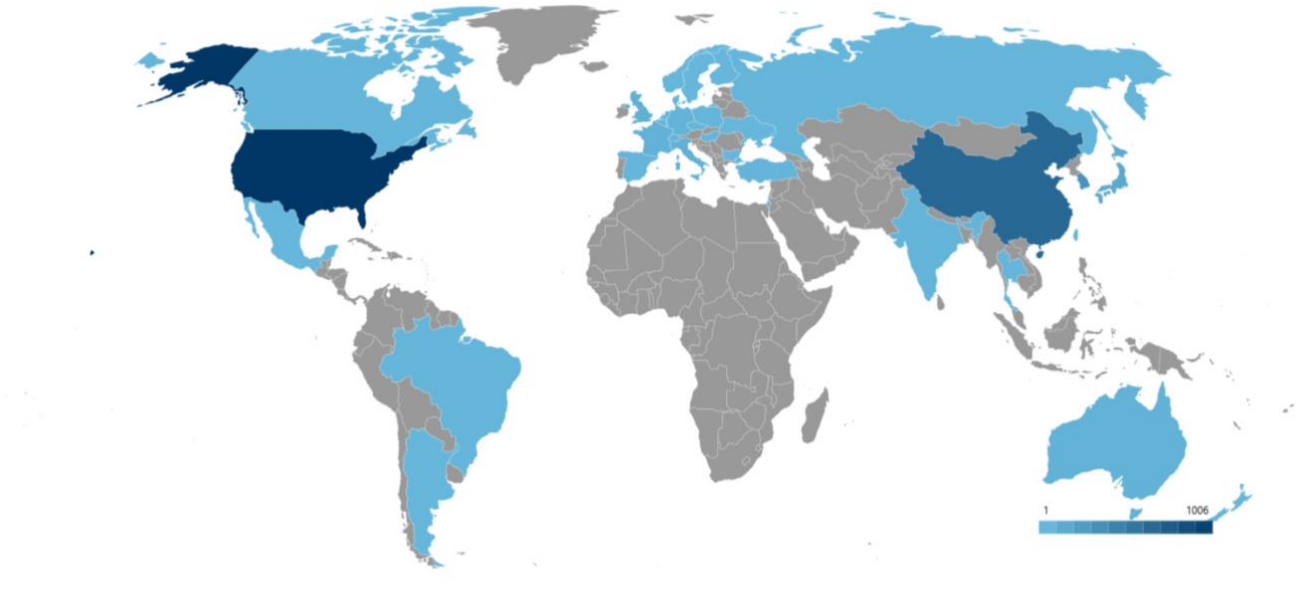

Figure 5. Top 50 Patent Families by All Priority Countries (without EP and WO). (Source: Orbit)

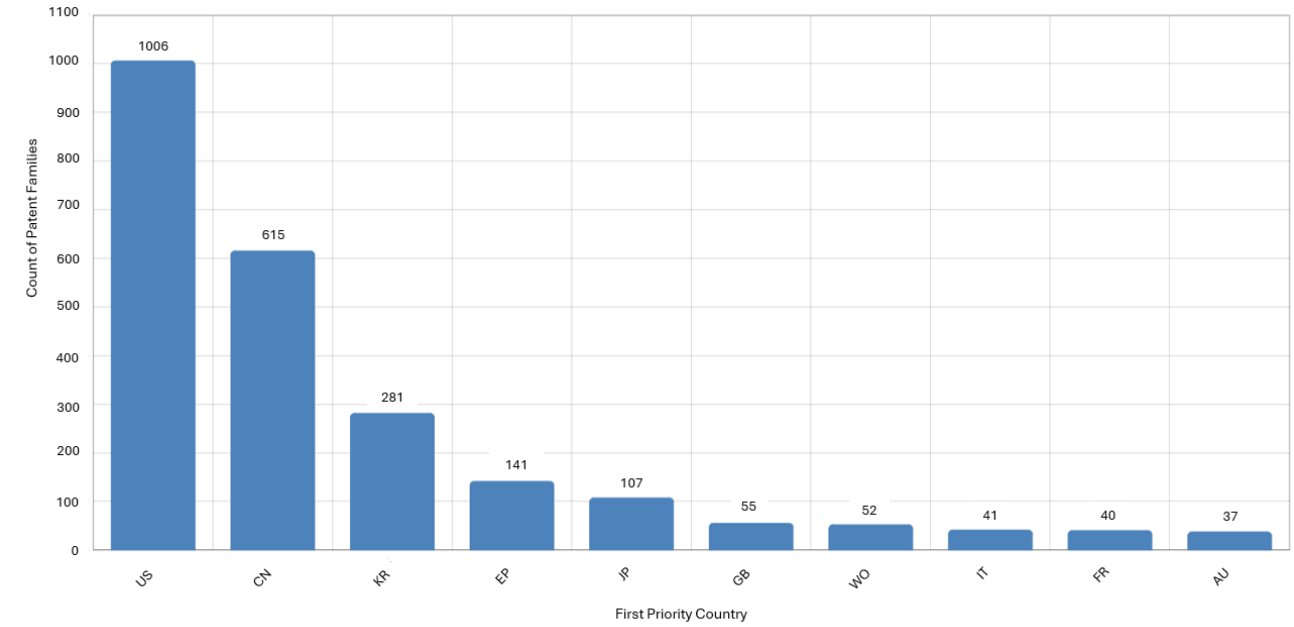

Figure 6. Top 10 Patent Families by All Priority Countries (Source: Orbit)

9.4 Protection Country

Similarly, the following map shows the protection countries, which are the jurisdictions of granted patents including which countries in Europe that patents are still active, which is a good indication of the leading markets in a given field. In this instance, the US and China are the leading jurisdictions, accounting for approximately 30% and 29% of all patent families, respectively. This is followed by Europe (~25%) and South Korea (~19%), of all patent families.

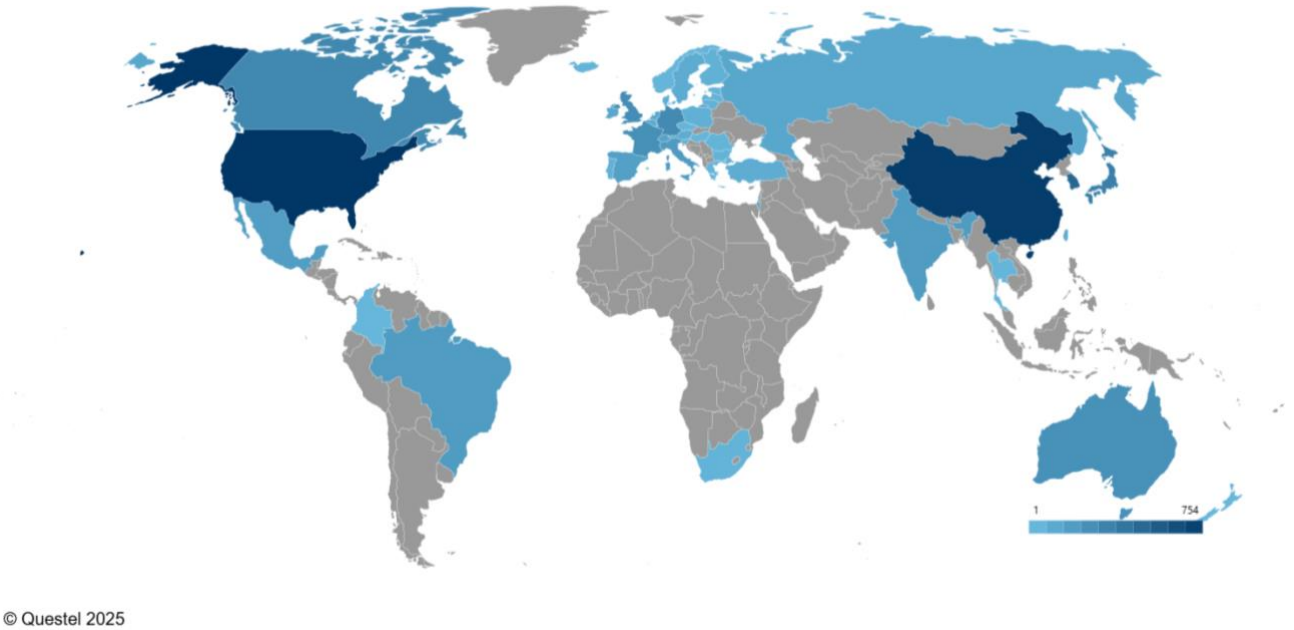

Figure 7. Top 50 Patent Families by Protection Country (Source: Orbit)

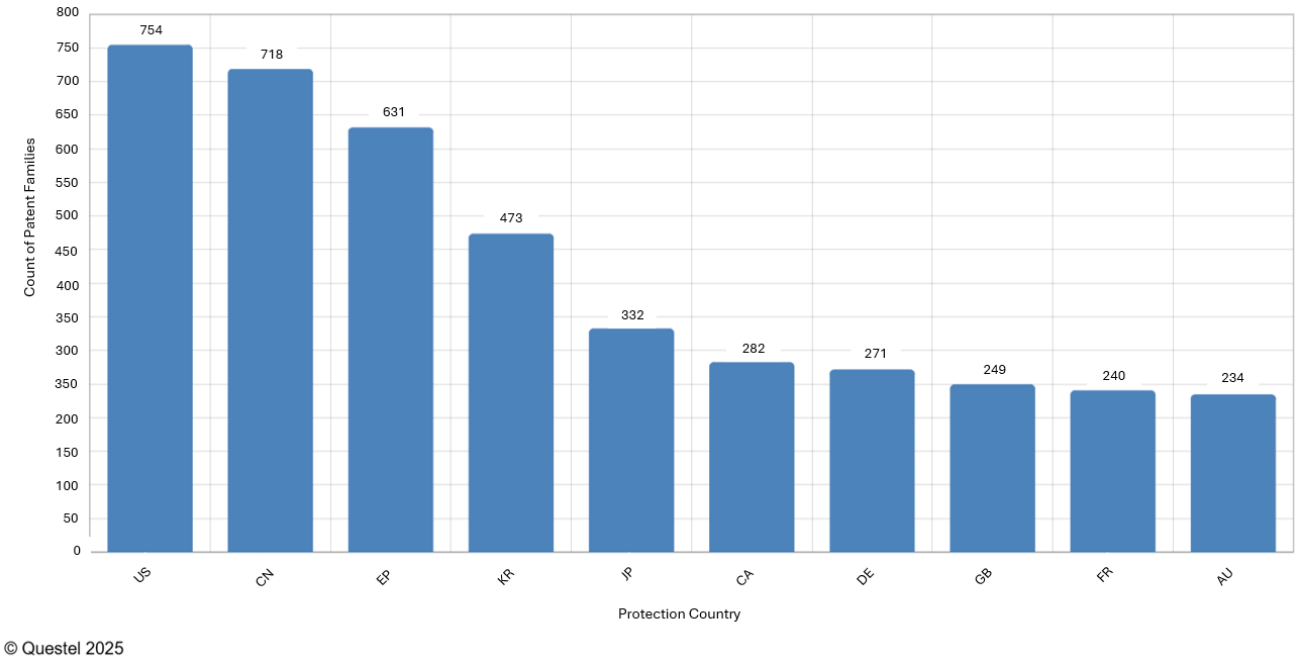

Figure 8. Top 10 Patent Families by Protection Country (Source: Orbit)

9.5 Global Grant Success

An assessment of the proportion of granted patents compared to patent applications can provide additional insight into the commercial value of the technology, and the stage of development of the market, as well as provide information on market entry and competition. The following figure provides an overview of the legal status of patent families relating dermal/facial injectables.

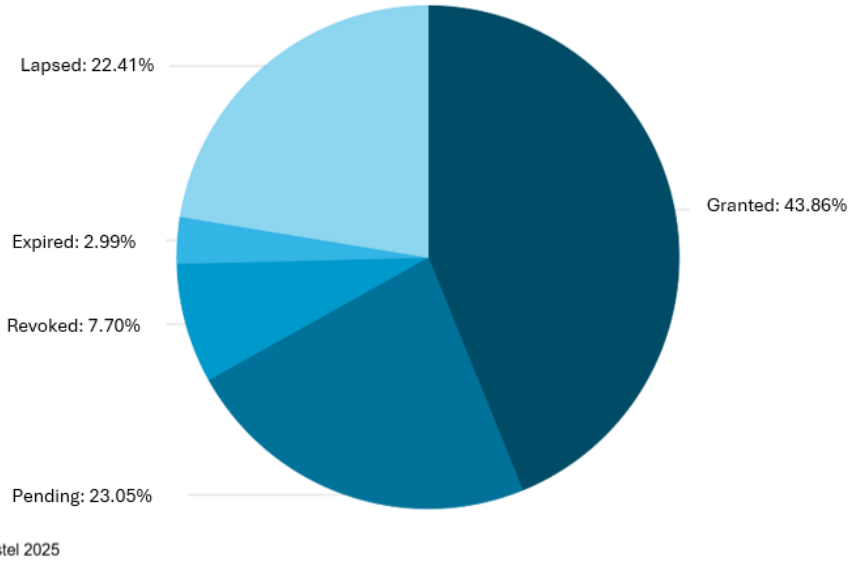

Figure 9. Legal Status – Granted, Pending, Revoked, Expired, Lapsed (Source: Orbit)

It is evident from the substantial proportion of granted patent families (43.86%), compared to pending (23.05%), and dead (33.10%), that this is a globally well-established field with significant commercial interest. The high proportion of granted patents indicates not only sustained investment in IP protection but also technological robustness that has passed formal examination thresholds in

multiple jurisdictions. The relatively high number of pending patent applications demonstrates that the facial injectables space is still a dynamic field and is a strong indication of an active pipeline of technological advancements. A low proportion of dead patent families, which mainly consists of lapsed patent families may reflect natural expiration due to the end of the patent term, failure to pay maintenance fees, or strategic abandonment. Nonetheless, the relatively low level of dead patent families compared to alive, implies that there is a sustained commercial and technological relevance for facial injectables, but also an increasingly competitive field. Further, it may suggest a lower rate of IP obsolescence, which is consistent with a field where foundational formulations and delivery technologies often retain long term utility.

In order to analyse the patent landscape further, the following graph compares the legal status of patent families in key jurisdictions.

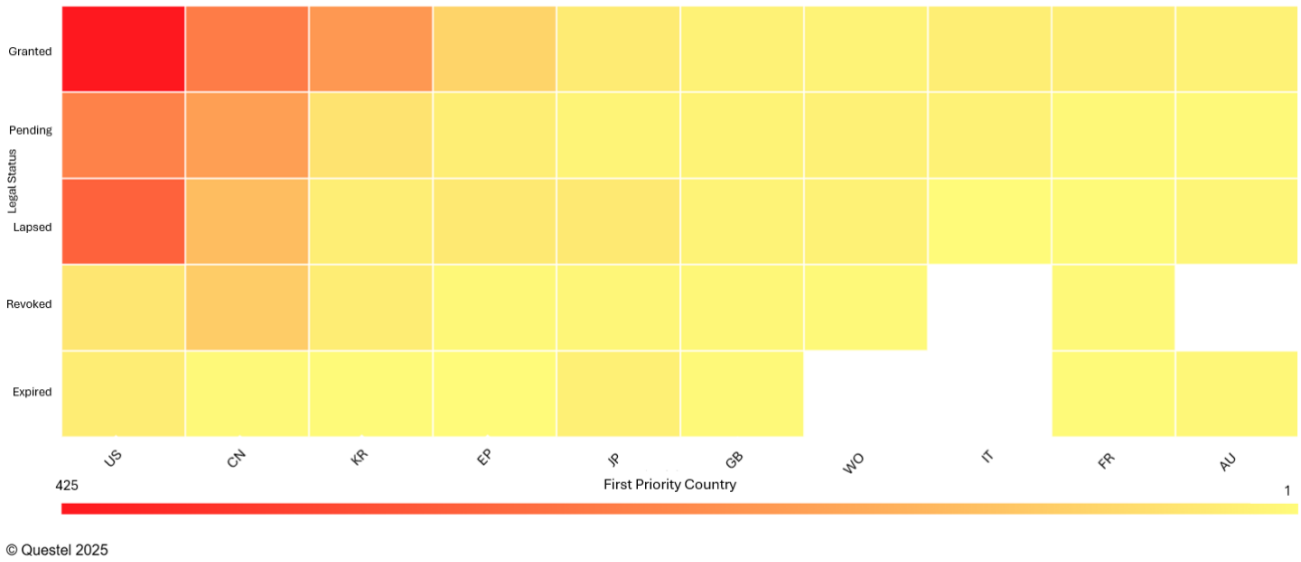

Figure 10. Patent Families by First Priority Country / Legal Status (Source: Orbit)

The most well-established markets are represented by the US, China, and South Korea, as can be observed from proportions of granted, pending, and lapsed patent families. The US has the highest number of active patent families (754), including the highest number of granted patents, suggesting strong enforceability and commercial deployment of technology, although it does also have the highest number of lapsed patent families.

The analysis of revoked patent families can also provide insights into the challenges to market entry, wherein it may be most difficult to enter the field in China, as indicated by the higher number of revoked patent families. This is likely due to a more regulated IP environment including increased scrutiny during examination or opposition processes, as in China any use of a method for cosmetic surgery is considered to lack industrial applicability and may be deemed unpatentable. Although China does the second highest number of active patent families suggesting a dynamic innovation pipeline.

South Korea demonstrates a relatively high level of granted patent families compared to dead patent families, suggesting a more stable IP landscape.

9.6 Top Assignees

The following chart highlights the top 10 assignees for the patent families identified in relation to dermal/facial injectables, which represent both the top industry and academic groups in the field in terms of patenting activity.

Rank	Assignee	Document Count	Organisation Type	HQ
1	AbbVie	144	Commercial	US
2	Galderma Pharma	56	Commercial	Switzerland
3	Merz	37	Commercial	Germany
4	L'Oreal	29	Commercial	France
5	Johns Hopkins University	20	Academic	US
6	Digital China Group	19	Commercial	China
7	Merck	17	Commercial	US
8	Tufts College Trustees	17	Academic	US
9	Truinject	14	Commercial	US
10	AGC	13	Commercial	Japan

Table 27. Top players By Number of Filings. (Source: Orbit)

12% of the total patent families are owned by the top 10 players, the majority of which are commercial players, which suggests a commercially dominated but still highly fragmented IP landscape, with a long tail of smaller companies and research institutions also contributing to innovation. This suggests that there is a substantial white space for new entrants or niche players to develop specialised IP positions, particularly in adjacent technologies such as regenerative aesthetics or customised formulations. Four of these assignees are based in the US, with the remaining assignees based in Europe (Switzerland, Germany, and France), and Asia (China and Japan). Interestingly, **AbbVie**, **Merz**, and **Galderma Pharma**, three of the most recognised commercial names in aesthetic medicine, were all identified in **Section 4.1 - Established Players**. This alignment between patent activity and market leadership reinforces their first-mover advantage and involved in innovation across formulations, delivery systems, and treatment indications.

Examples of smaller companies are shown in the table below. We have profiled a number of these companies in **Section 4.2 - Emerging Players**.

Assignee	Document Count	HQ
Imeik Technology Development	13	China
Huadong Medicine	9	China
Prollenium Medical Technologies	7	Canada
Aquavit Pharmaceuticals	6	US
QH Bio	5	South Korea
Spiderwort	5	Canada

Table 28. Smaller Players by Number of Filings. (Source: Orbit)

9.7 Landscape Concepts

We reviewed how the concept clusters specifically the type of injectable changed over time. These evolving trends provide insights into shifting clinical preferences, material science advancements, and regulatory factors influencing injectable product development.

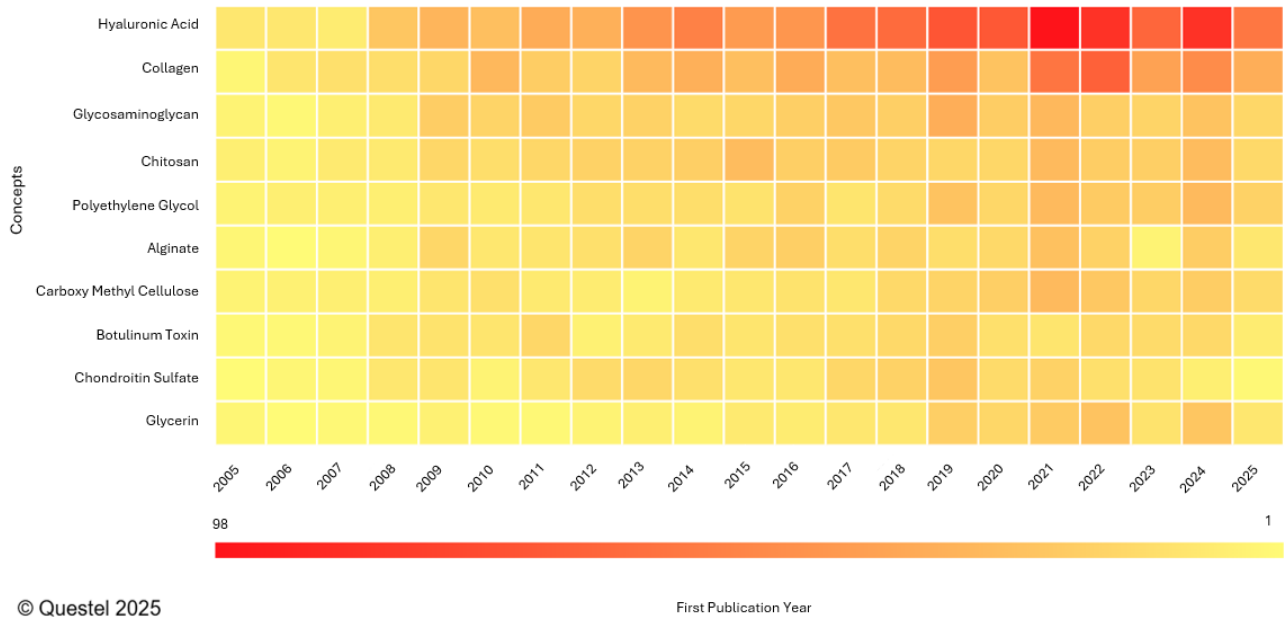

Figure 11. Patent Families by First Publication Year / Top 10 Concepts (filtered to include types of injectables only). (Source: Orbit)

Over the past 20 years, patent publications for the majority of injectables increased over time, among these, HA has experienced the most significant and sustained surge, from 2017 onwards. This rise corresponds to its widespread adoption in dermal fillers and joint therapies, due to HA's biocompatibility, viscoelastic properties, and versality. Further, innovations in HA formulations, such as cross-linking technologies and sustained release systems, have likely been driving factors. Further, collagen also saw a substantial increase in patent publications from 2021 onwards, likely driven by innovative advances that are providing alternative, next-generation solutions in the face of the decline in consumer interest of collagen fillers.

In contrast, other materials such as glycosaminoglycan, chitosan, and polyethylene glycol have displayed a more gradual, yet steady, increase in patent publication activity. The more moderate growth may reflect their niche or emerging roles in targeted applications, rather than broad commercial deployment.

9.8 Key Patent Families

A commonly used indicator of the number of times a patent is cited by a later patent ("forward citations"), wherein more valuable patents tend to be cited more often by less valuable patents. The graphic below highlights key patents grouped by concept, as identified through their non-self forward citation counts.

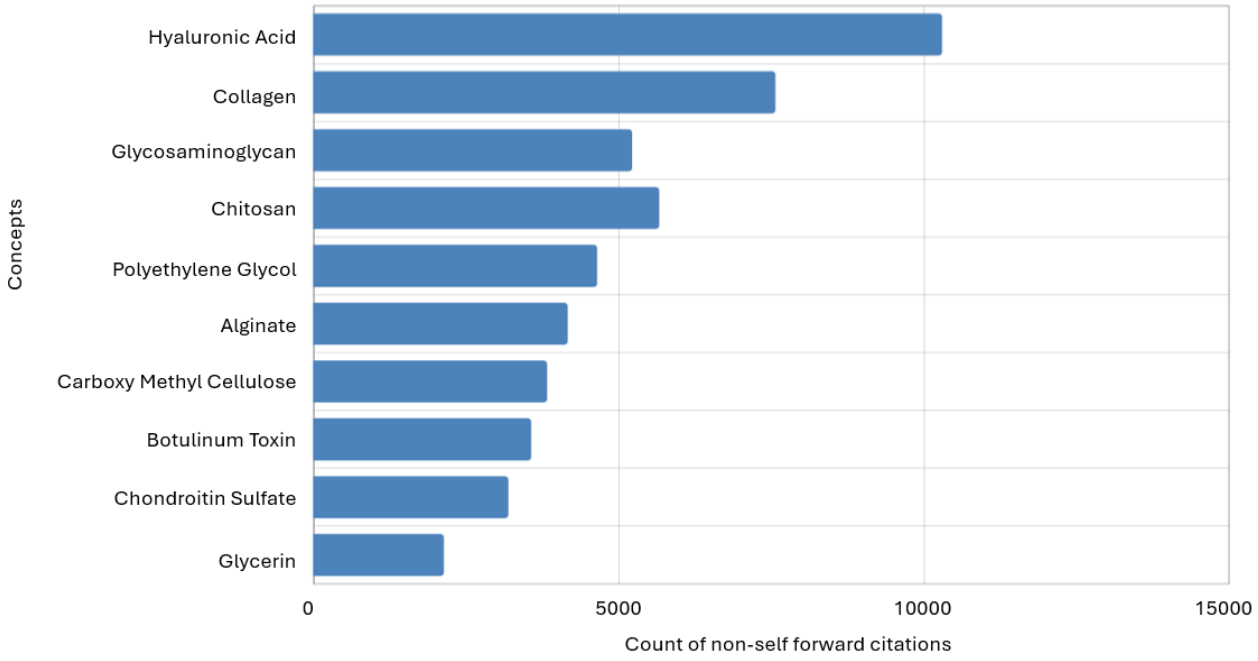

Figure 12. Patent Families by Count of Non-Self Forward Citations / Top 10 Concepts (filtered to include types of injectables only). (Source: Orbit)

Consistent with the trends illustrated in the above figure, HA has the greatest number of non-self forward citations with 10,288 citations – significantly surpassing all other concepts. Collagen follows with 7556 citations, and chitosan ranks third with 5651 citations. This distribution suggests that HA-related patents are particularly influential within the field of injectable technologies, likely due to their widespread application in aesthetic injectables.

In contrast, glycerin, chondroitin sulfate, and botulinum toxin exhibit the lowest citation counts, with 2122, 3178, and 3553, respectively. This relatively lower citation frequency may indicate either a more specialised scope of use, reduced innovation activity, or less foundational importance in driving subsequent patent developments.

Overall, the disparity in citation counts highlights the dominant role of HA in shaping downstream innovation, while suggesting that the other substances, although still relevant may occupy more niche or mature areas within the aesthetic injectable space.

A review was then conducted of the key patent families being cited in the three concept areas with the greatest number of non-self forward citations - HA, collagen, and chitosan.

HA

When reviewing the types of technologies being patented in the HA space, there is a clear trend wherein the majority of the top IPC codes are directed to technologies related to preparations or compounds, particularly those involving macromolecular materials such as polysaccharides, and hydrogels, as shown in the below table.

IPC Code	Description	Count of Patent Families
A61L-027/20	Macromolecular materials – Polysaccharides	453
A61L-027/52	Materials characterised by their function or physical properties – hydrogels or hydrocolloids	323
A61K-008/73	Cosmetics or similar toilet preparations characterised by the composition containing organic macromolecular compounds – polysaccharides	317
A61Q-019/08	Preparations for care of the skin – anti-ageing preparations	313
A61L-027/54	Materials characterised by their function or physical properties – biologically active materials	261

Table 29. Top Five IPC Codes of HA Injectable Aesthetics Technologies (Source: Orbit)

The dominance of these IPC codes that innovation is concentrated around functional biomaterials and cosmetic formulations with specific performance characteristics such as tissue integration and moisture retention.

This trend is further supported by an analysis of the most cited HA-related patent families which again points to innovation around novel cosmetic and medical formulations of HA, particularly hydrogel systems and injectable compositions, as shown in the below table. Allergan features as the assignee for three of these patent families, reinforcing its position as the dominant player in the aesthetic injectables space.

Patent Family	Title	No. Forward citations	Assignee	Publication Date
WO/2010123945	Silk fibroin hydrogels and uses thereof	211	Allergan	28-10-2011
US20100028437	Hyaluronic acid-based gels including lidocaine	159	Allergan	04-02-2010
US20070212385	Fluidic Tissue Augmentation Compositions and Methods	108	David Nathaniel	13-09-2007
Us20090143331	Polysaccharide gel formulation having increased longevity	108	Allergan	04-06-2009
US20100055184	Hydrogels for vocal cord and soft tissue augmentation and repair	104	Massachusetts Institute of Technology	04-03-2010

Table 30. Top Five Patent Families by Forward Citations - HA Injectable Aesthetics Technologies (Source: Orbit)

Collagen

When reviewing the types of technologies being patented in the collagen space, a clear trend emerges that mirrors patterns seen in the HA domain. As with HA, the most commonly patented technologies in the collagen field are centered around preparations or compounds, particularly those involving macromolecular materials. However, novel collagen polypeptides also feature with the second highest count of patent families, underscoring the innovation directed at novel collagen molecules, which may offer enhanced performance characteristics such as increased stability or bioavailability.

IPC Code	Description	Count of Patent Families
A61L-027/20	Macromolecular materials – Polysaccharides	80
A61L-027/24	Polypeptides or derivatives thereof – Collagen	60
A61Q-019/08	Preparations for care of the skin – anti-ageing preparations	59
A61Q-019/00	Preparations for care of the skin	58
A61L-027/54	Materials characterised by their function or physical properties – biologically active materials	57

Table 31. Top Five IPC Codes of Collagen Injectable Aesthetics Technologies (Source: Orbit)

This trend toward formulations and bioactive compounds is further supported by an analysis of the most cited collagen-related patent families which are primarily directed to preparations/compounds, as shown in the below table. It is notable that three of the most cited collagen patent families also appeared in the HA analysis, suggesting technological convergence between HA and collagen.

Patent Family	Title	No. Forward citations	Assignee	Publication Date
WO/2010123945	Silk fibroin hydrogels and uses thereof	211	Allergan	28-10-2011
US20070212385	Fluidic Tissue Augmentation Compositions and Methods	108	David Nathaniel	13-09-2007
US20100055184	Hydrogels for vocal cord and soft tissue augmentation and repair	104	Massachusetts Institute of Technology	04-03-2010
WO/2016/072821	Composition for differentiation induction of adipocyte containing stem cell-derived exosome, regeneration of adipose tissue, and skin whitening or wrinkle improvement	80	ExostemTech	12-05-2015
CA2833385	Injectable preformed macroscopic 3-dimensional scaffolds for minimally invasive administration	77	Harvard College	01-11-2012

Table 32. Top Five Patent Families by Forward Citations - Collagen Injectable Aesthetics Technologies (Source: Orbit)

Chitosan

When reviewing the types of technologies being patented in the chitosan space, similar trends emerge as seen in the HA and collagen spaces. In particular, patent families are predominantly directed to novel collagen materials, in particular polysaccharides. Thus, suggesting that polysaccharide-based hydrogels and bioactive formulations are the core focus area of chitosan innovation in the aesthetic injectables space.

IPC Code	Description	Count of Patent Families
A61L-027/20	Macromolecular materials – Polysaccharides	30
A61L-027/52	Materials characterised by their function or physical properties – hydrogels or hydrocolloids	25
A61L-027/54	Materials characterised by their function or physical properties – biologically active materials	19
A61K-008/73	Cosmetics or similar toilet preparations characterised by the composition containing organic macromolecular compounds – polysaccharides	17
A61K-047/36	Macromolecular organic or inorganic compounds – Polysaccharides, derivatives thereof	17

Table 33. Top Five IPC Codes of Chitosan Injectable Aesthetics Technologies (Source: Orbit)

This is reflected by an analysis of the most cited chitosan-related patent families. Notably, WO/2010123945 and US20070212385 appear across all three analyse - HA, collagen, and chitosan, underscoring the interconnected nature of biomaterial innovation. Similarly, US20090143331 is shared between the HA and chitosan spaces. This overlap implies that innovation in one space frequently translates or extends to the other, and companies operating in this domain may benefit from an integrated IP strategy that spans HA, collagen, and/or chitosan technologies.

Patent Family	Title	No. Forward citations	Assignee	Publication Date
WO/2010123945	Silk fibroin hydrogels and uses thereof	211	Allergan	28-10-2011
US20070212385	Fluidic Tissue Augmentation Compositions and Methods	108	David Nathaniel	13-09-2007
US20090143331	Polysaccharide gel formulation having increased longevity	108	Allergan	04-06-2009
CA2890366	Injectable Silk Fibroin Particles And Uses Thereof	43	Tufts College	16-05-2013
WO2009105614	Compositions For Tissue Augmentation	29	Dermal Technologies	27-08-2009

Table 34. Top Five Patent Families by Forward Citations - Chitosan Injectable Aesthetics Technologies (Source: Orbit)