dsm-firmenich

Together elevating patient health

Discover how we go beyond the essential to support the development of more desirable and sustainable therapies that elevate the health of patients worldwide.

We bring progress to life

Co-create therapies that make our world a healthier place

Health and well-being means prevention and treatment of disease for a better quality of life. When you collaborate with dsm-firmenich, you get an expert, purpose-led partner committed to making our world a healthier place.

- Simplify the drug approvals process with our active pharmaceutical ingredients (API) portfolio elevated by Verilege™, a distinct suite of expert services and superior customer care.
- Unlock new treatment possibilities and patient convenience with CBtru®, our premium cannabidiol (CBD) drug product intermediate designed for optimized bioavailability via oral solid dosage forms.
- Take advantage of our specialty excipients and ingredients portfolio to overcome formulation challenges—for both small molecules and biologic products—backed by extensive regulatory and technical know-how.
- Elevate patient compliance with a comprehensive taste solutions offering, carefully curated for the pharmaceutical market and designed to improve the palatability and acceptance of medication.

API portfolio elevated by Verilege™

In the world of pharmaceutical innovation, managing the intricacies of regulatory compliance, ensuring ingredient quality, and meeting sustainability targets is a complex task. To help you enter, navigate, and expand in the pharmaceutical market with confidence and peace of mind, our API portfolio is elevated by Verilege™, a suite of expert services and superior customer care.

Verilege™ **simplifies the drug approvals process** by helping you:

- Navigate regulatory hurdles with ease.
- Count on consistent high-quality and pharma standards.
- Unlock new markets and opportunities.
- Progress health sustainably.
- De-risk your supply chain geographically.

Learn more at:
dsm-firmenich.com/verilege

Tailored to your needs, delivered by experts

The Verilege™ program comes in tiered service levels that can be adapted to your specific needs—whether you require basic guidance or advanced, hands-on support. Each service level is brought to life by a team of industry experts passionate about helping you succeed, so you can focus on what really matters—bringing life-changing and life-saving medicines to market.

Verilege™
Quality services

Excellence from start to finish

Our quality services ensure we deliver consistent, high-quality APIs across our global network through:

- cGMP-certified facilities adhering to the highest manufacturing standards.
- Robust quality control processes.
- ICHQ7 compliance for reliable pharmaceutical-grade ingredients.
- Continuous investments in our facilities to better serve your needs—and ultimately patients—both now and in the future.

Regular inspections by various authorities, such as:

FDA MHRA swissmedic ansm Agence nationale de sécurité du médicament et des produits de santé Pmda 独立行政法人 医薬品医療機器総合機構 Pharmaceuticals and Medical Devices Agency

What you can get:

- ✓ Multi-year quality agreements
- ✓ Commitment to change notifications and change management controls
- ✓ Analytical test methods and expert services as needed
- ✓ Access to audit reports and site auditing
- ✓ Nitrosamine risk assessments
- ✓ Individualized quality support

Verilege™
Regulatory services

Reduce complexity while increasing compliance

Our regulatory services can help streamline and accelerate regulatory filings and product approvals with:

- Comprehensive documentation, including up-to-date dossiers for global registrations—such as CEPs, US DMFs, Japanese DMFs, and China DMFs—along with access to the API section of marketing authorization approvals worldwide, and support for direct API registrations where required.
- Standard and customizable statements tailored to meet specific market and customer needs.
- Personalized assistance with regulatory submissions and documentation to ensure compliance with ICH, US FDA, EMA, and other regional standards.
- Project-based collaboration to develop compliant drugs, including regulatory documentation gap assessments and regulatory strategy expertise.

Verilege™
Sustainability services

Elevate patient health sustainably

We go beyond pharma compliance with solutions that make sustainable progress possible, supporting you with:

- Life Cycle Assessments (LCAs) expertise in accordance with ISO 14040/44 standards, quantifying the environmental impact of our solutions. We develop greenhouse gas (GHG) emission reduction roadmaps at site and ingredient levels, helping you to advance your decarbonization efforts.
- Transparent information sharing, providing access to our primary data, sustainability targets, and certifications (EcoVadis, SBTi), enabling you to assess dsm-firmenich as a supplier and make informed purchasing decisions.
- Our Imp'Act Card™ program offers detailed, science-based metrics on the environmental footprint of our products at an ingredient level, including traceability, certifications, and social impact data (Sedex).
- Expertise and customized support for sustainability questionnaires, emission calculations, or joint development of a sustainable solution.

Onward to net-zero

Progressing toward our science-based targets

100% purchased renewable electricity by 2025

42% absolute scope 1 & 2 emissions reduction by 2030

25% absolute scope 3 emissions reduction by 2030

Net-zero greenhouse gas emissions by 2045

Verilege™
Supply chain services

A worldwide network of strategically located production facilities

Our supply chain services ensure access to high-quality APIs via:

- A worldwide network of strategically located production facilities.
- Assuring delivery with Good Distribution Practice (GDP) requirements.
- Help de-risking your supply chain geographically.
- Supporting your drug development pipeline.

Ingredients for pharmaceutical use (APIs and excipients)

Product Code	Product
Vitamin A	
50 1754 5	**Retinyl Palmitate 250 CWS/F Ph**
50 1626 2	**Retinyl Palmitate 1.7 MIUg Ph**
50 1227 9	**Dry Vitamin A Acetate 500 B**
50 1829 3	**Retinyl Palm1.7MIU/G BHA/BHT Ph**
Vitamin E	
50 1657 7	**Dry Vitamin E 50% CWS/S Ph**
50 1626 0	**dl-α-Tocopheryl Acetate Ph**
50 1674 1	**all-rac-α-Tocopherol Ph**
Vitamin D	
50 1621 2	**Dry Vitamin D3 100 SD/S Ph**
50 1647 3	**Dry Vitamin D3 100 CWS Ph**
50 1752 4	**Vitamin D3 1.0 MIU/g Ph**
50 1626 3	**Vitamin D3 Crystalline Ph**
Vitamin K1	
50 1822 5	**Dry Vitamin K1 5% SD Ph**
04 3501 5	**Vitamin K 1**
50 1322 4	**Vitamin K1 API** *(US DMF only)*
Vitamin B1	
04 2947 3	**ROCOAT Thiamine Mononitrate 33 1/3%**
50 1625 7	**Thiamine Hydrochloride Ph**
04 1894 3	**Thiamine Mononitrate**

Product Code	Product
Vitamin B2	
50 1751 3	**Riboflavin 5'-Phosphate Ph**
50 1775 4	**Riboflavin Universal Ph**
Vitamin B3	
04 8784 8	**Niacinamide**
50 1629 1	**Niacinamide Ph** *(US DMF only)*
Vitamin B5	
50 1776 0	**Calcium D-Pantothenate Ph**
50 1625 8	**D-Panthenol Ph**
Vitamin B6	
04 2945 7	**ROCOAT Pyridoxine Hydrochloride 33 1/3%**
50 1646 0	**Pyridoxine Hydrochloride Ph**
Vitamin B7	
50 1626 4	**D-Biotin Ph**
50 1728 9	**Biotin 1% Trit Ph**
Vitamin B9	
50 1625 9	**Folic Acid Ph**
Vitamin B12	
50 1823 8	**Vitamin B12 1% Ph**
50 1823 5	**Vitamin B12 0.1% Ph**
50 1630 0	**Vitamin B12 Crystalline Ph**

Product Code	Product
Vitamin C	
04 0809 3	**Ascorbic Acid Fine Granular**
50 1645 0	**Ascorbic Acid Fine Powder Ph**
50 1625 5	**Ascorbic Acid Ph**
50 1775 7	**Calcium Ascorbate Ph**
50 1625 6	**Sodium Ascorbate Ph**
50 0976 6	**Ascorbic Acid Ultra Fine Powder**
04 2511 7	**Coated Ascorbic Acid, Type EC**
50 0774 7	**Ascorbic Acid 95% Granulation**
50 1775 8	**Sodium Ascorbate Fine Granular Ph**
50 1642 9.X3U	**Coated Ascorbic Acid, FC Ph***
50 1842 2	**Ascorbic Acid 90% Granulation Ph**
Beta-Carotene	
50 1434 4	**ß-Carotene Crystalline Ph**
50 1438 7	**ß-Carotene 30% FS Ph**
50 1435 2	**BetaTab® 20% S Ph**
Cannabinoid Intermediate	
50 1830 0	**CBtru®*** **
Benzodiazepines**	
04 3967 3	**Clonazepam**
50 0553 1	**Clonazepam JP**
04 4064 7	**Bromazepam**
05 00552 3	**Bromazepam JP**
04 4181 3	**Flunitrazepam**
Antifungals**	
50 1071 3	**Flucytosine**
Benzamides**	
04 0555 8	**Moclobemide**

* This product is manufactured under Good Manufacturing Practice (GMP-1) standards for drug product intermediates, in accordance with EudraLex Volume 4, ensuring consistent high quality and compliance with EU regulations.

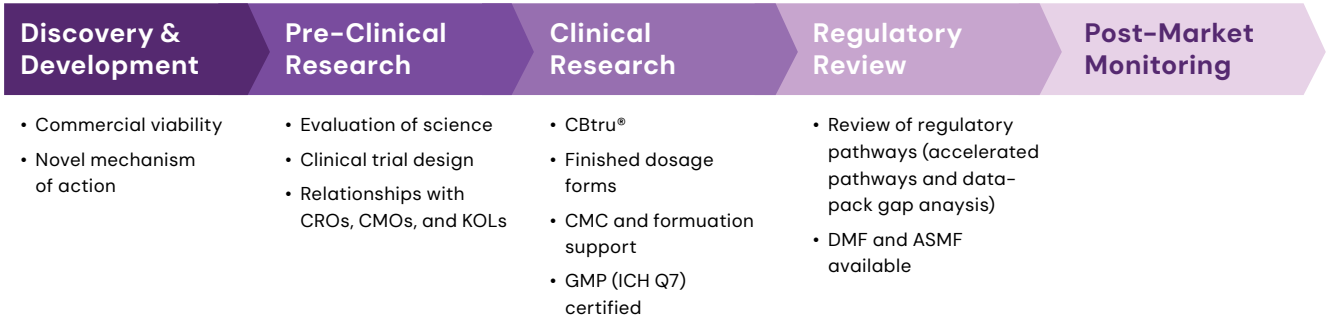
** Please contact your dsm-firmenich representative for more information.

*** Currently available for use in the manufacturing of investigational pharmaceutical preparations (clinical research); will be available for use in the manufacturing of drug products by the end of 2025.

We are your end-to-end partner for development of medicines with cannabinoid ingredients

We are passionate about pioneering the next frontier in cannabinoid research and development with the highest quality CBD pharmaceutical ingredients and end-to-end technical, formulation, regulatory, and quality expertise.

Our unique innovation platform is helping to simplify complex formulation challenges with multiple APIs, including cannabinoid ingredients, in early-stage drug development and inspire customized cannabinoid solutions that **unlock new treatment possibilities for patients worldwide**.



Transform patient care with CBtru®

CBtru® is an innovative, formulated CBD drug product intermediate. It is making a new era in medicine possible—one that unlocks the true potential of CBD:

- **Make CBD oral solid dosage forms a reality**—a more patient-centric delivery format with wider applicability versus existing liquid oil-based dosage forms.
- **Enable higher API loading**—meaning lower daily dosages and more convenience for patients.
- **Optimize CBD bioavailability**—CBtru® shows comparable bioavailability to the only market-approved oil-based CBD formulation (Epidiolex®)[1].
- **Proven safe and well-tolerated**–in human clinical trials.

Learn more at:
dsm-firmenich.com/CBtru

Enhancing drug formulations with specialty excipients

Drug formulation is growing more complex with increasingly challenging API properties, drug delivery systems, and patient population requirements.

We offer a range of specialty excipients–including vitamins, vitamin derivatives, flavors, and taste modulators–and partner with our customers to find the right solution for the development of safe and effective drug formulations.

Take your drug product to another level with our expertise in vitamins, vitamin derivatives, and taste solutions

Enhance small molecule formulations (oral and parenteral)

Improve the profile of small molecule drug products with our specialty excipients, from enhanced API protection to lower risk of nitrosamine formation.

Drive innovation in biologics

Our ingredients can support the formulation of biologics–including preventing protein aggregation, reducing viscosity in monoclonal antibody solutions, acting as adjuvants in vaccines, and providing nutrients in cell cultures.

Improve patient convenience and therapy compliance through taste solutions

We offer a wide portfolio of taste solutions, including flavors and extracts across a broad range of tonalities, taste modulators, and encapsulation technologies, designed to help improve patient convenience and therapy compliance.

Learn more at:
dsm-firmenich.com/pharma-taste-solutions

Elevating compliance:
A comprehensive taste offering, carefully curated for pharma

The pharmaceutical industry is under increasing pressure to develop more patient-friendly dosage forms. The rise of pill fatigue—especially in chronic disease management—and conditions like dysphagia have significantly impacted patient compliance. On top of that, over 60% of APIs are considered to be bitter, making taste a key factor in adherence and supporting better treatment outcomes.[2]

Our portfolio of taste solutions can help you develop better tasting pharmaceuticals for improved therapy compliance with:

- **Flavors and extracts** across a broad range of tonalities, including citrus, mint, vanilla and brown notes, and fruits.
- **Taste modulators**, such as bitter blockers, off-notes maskers, sensates, as well as sweetness and mouthfeel enhancers, including a proprietary receptor-based discovery technology that enables fast screening and creation of taste receptor-specific maskers and blockers.
- **Encapsulation technologies**, that provide longer shelf life, resistance to moisture, oxygen, higher temperatures and a controlled (or optimized) flavor release.

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Partner with **dsm-firmenich**

We're here to help you create patient-centric solutions that allow treatments to meet their full potential.

Together, let's partner for successful drug development and elevate patient health.

Contact us to get started

We bring progress to life