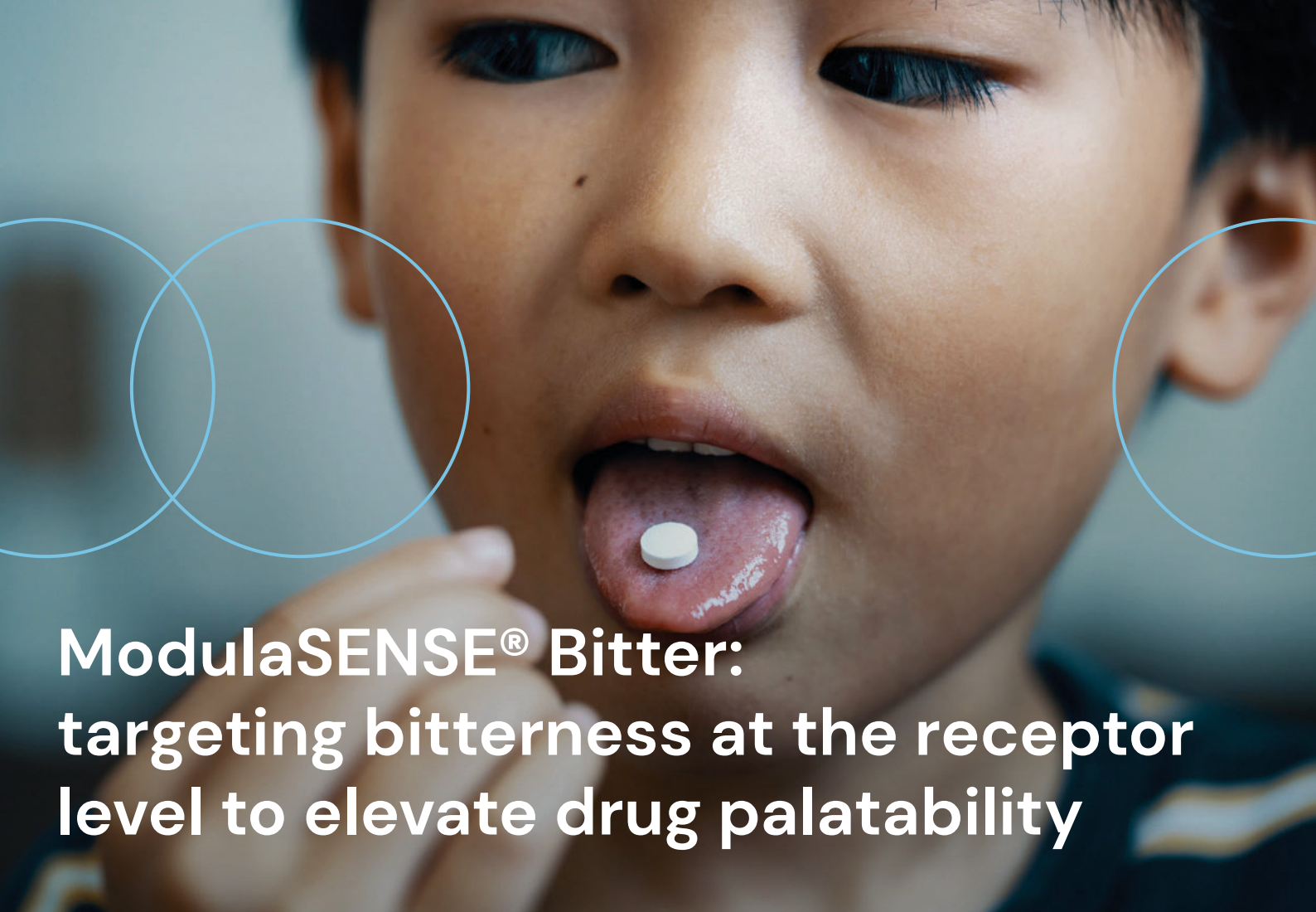


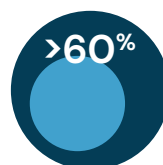


ModulaSENSE® Bitter: targeting bitterness at the receptor level to elevate drug palatability

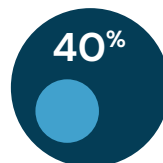
Using proprietary receptor-based discovery methods and sensory validation to design drug formulations that elevate drug palatability and improve patient adherence.

The perception of bitterness triggers a complex biological response, demanding an equally sophisticated scientific approach to create palatable medicines. Drug developers must balance multiple factors – from sensory performance and regulatory compliance to time to market – to meet patient and HCP expectations, as well as commercial goals, for better tasting therapies.

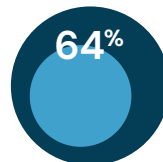
ModulaSENSE® Bitter is a breakthrough technology that addresses the complex challenges of bitterness in oral dosage forms. Rather than relying on generic masking, ModulaSENSE® Bitter combines blockers, maskers, and sweeteners with evidence-based insights to create targeted, formulation-specific solutions. The technology is applied through a multi-step, scientific workflow – backed by expert panels and comprehensive technical documentation – and is applicable across a wide range of APIs and oral dosage forms. The result is improved palatability through targeted bitterness reduction, supporting patient acceptance across demographics, including pediatric and elderly populations.



>60% of APIs in the market are considered bitter¹



40% of consumers say taste is an important purchase driver for OTC products²



Poor taste negatively affects adherence, with 64% of consumers at risk of discontinuing treatment³



The EMA and the U.S. FDA emphasize the importance^{4,5} of taste and palatability in pediatric formulations

Why dsm-firmenich?



Pharma-specific flavors and taste modulation portfolio

We have drawn on our expertise in taste solutions across various markets to curate a broad portfolio for use in solid, liquid, or semi-solid dosage forms. Stemming from our industry-leading innovation capabilities – including sensory analyses of pharma prototypes and receptor-based research – this cutting-edge taste offering has been created by experts with a deep understanding of requirements to enter, navigate, and expand in the pharmaceutical market.



Dedicated quality and regulatory teams

Each product in our pharma-specific taste portfolio is supported by, and delivered with, a comprehensive documentation package, designed to streamline the drug approval process. This extends to major markets around the world, with our dedicated quality and regulatory teams possessing in-depth knowledge of the filing process. Driven by continuous improvement, we help our customers navigate the ever-evolving pharmaceutical market with confidence and peace of mind.



Through partnership and collaboration

We work closely with our customers to help drug products reach their full potential. Our comprehensive, high-quality specialty excipients and ingredients portfolio is elevated by our expert services, enhancing the performance of your formulations and enabling the development of safe and effective drug products. This allows you to focus on what really matters: bringing life-changing and life-saving medicines to market.



Looking to elevate palatability and create more patient-friendly drug formulations? Partner with dsm-firmenich to find the right solution for your application.



Scan the QR code and learn how we can help you to incorporate novel taste solutions that elevate drug palatability, patient convenience, and compliance.

1. Dagan-Wiener A et al. Bitter or not? BitterPredict, a tool for predicting taste from chemical structure. Sci Rep. 2017;7(1):12074. doi: 10.1038/s41598-017-12359-7; 2. dsm-firmenich Taste Lounge Online Consumer Community, Total Sample n=200, September 2021; 3. Ranmal SR, et al. Poor-tasting pediatric medicines: Part I. A scoping review of their impact on patient acceptability, medication adherence, and treatment outcomes. Frontiers in Drug Delivery. 2025;5:1553286. doi:10.3389/fddev.2025.1553286; 4. EMA (2012). EMA Paediatric Guideline (EMA/CHMP/QWP/805880/2012 Rev.2); 5. FDA (2023). "Pediatric Drug Development Under the Pediatric Research Equity Act and the Best Pharmaceuticals for Children Act: Scientific Considerations Guidance for Industry. DRAFT GUIDANCE."

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