

Groundbreaking Research Published from Collaborative Effort between Bicoll GmbH, Symrise AG, University of Vienna and Technical University of Munich

*New Study in Journal of Agricultural and Food Chemistry Sheds Light on Bitter-Masking Compound from the Resin of *Daemonorops Draco**

Planegg, Martinsried — A landmark study resulting from a collaborative effort between researchers from Bicoll, University of Vienna, the Technical University of Munich, and Symrise, and has just been published in the prestigious Journal of Agricultural and Food Chemistry. The article, titled "*Identification of 4'-Demethyl-3,9-Dihydroeucomin as a Bitter-Masking Compound from the Resin of *Daemonorops Draco**," explores the identification of the bitter-masking compound 4'-Demethyl-3,9-dihydroeucomin (DMDHE). It has been isolated from the resin of the palm tree using an activity-guided in vivo (sensory bitterness rating of quinine) and in vitro (cell-based bitter response assays). This approach is offering new insights that could have a significant impact on the food industry and beyond. The pre-prepared resin of *Daemonorops draco* was obtained and DMDHE was synthesized by Bicoll.

This research represents the culmination of over 4 years of joint work across multiple disciplines, including chemistry, biology, and data science, with the support of a 1.6 Mio. € SimLeap grant from the German Ministry of Education and Research (BMBF). By combining the unique strengths and expertise of each participating organization, the team was able to achieve breakthroughs that would have been difficult to accomplish independently.

Dr. Kai Lamottke, the lead author from Bicoll, commented, "Our collaboration project SimLeap has allowed us to push the boundaries of taste perception. The synergy between our teams facilitated an exchange of ideas and methods. It ultimately led to this exciting discovery and subsequent patents evolving from them in the collaborative research SimLeap-project."

Some key findings from the SimLeap-research include:

- Special separation techniques for taste identification have been applied to select the right candidate pre-purified extracts and to avoid misleading off-taste.
- DMDHE in the most potent bitter-masking fractions has been identified.
- Complete characterization of DMDHE as bitter-masking homoisoflavanone.
- The identified pre-purified extract with DMDHE as the lead compound decreases the sensory bitterness of quinine by $-30\% \pm 6\%$.

The study also highlights the importance of cross-institutional and interdisciplinary cooperation. Tackling complex global challenges such as bitter taste masking is a technique widely used in food, beverage, and pharmaceutical industries to cover up or reduce the perception of bitter flavors, especially if it comes to the motivated up-take of healthy, but bitter-perceived ingredients. Classically sugar addition is one of the common approaches here. Sugar needs to be reduced for a healthy lifestyle.

This research has the potential to influence masking the bitter taste as one of the key strategies to improve the taste, palatability, and overall appeal of foods, food formulations, or medicinal products. Moreover, existing product portfolios could be expanded by creating new products or formulations that might have been avoided due to unpleasant, but healthy, taste profiles. The publication of this article is not only a significant achievement for the authors but also reflects the growing trend of collaborative research across borders and disciplines.

[The full article](#) can be accessed in the Journal of Agricultural and Food Chemistry.

About Bicoll GmbH:

Bicoll GmbH is a pioneering and privately owned biopharmaceutical company headquartered near Munich in Planegg / Martinsried, Germany. Specializing in natural product-based drug discovery and related fields relying on small molecule innovation, Bicoll offers pre-clinical support with an efficient, multi-disciplinary approach to drug discovery. Our dedication to sustainable and health-conscious innovation extends to various industries, including food and beverage, pharmaceuticals, cosmetics, and agrochemicals.

We are committed to the discovery and optimization of the highest quality lead compounds, providing essential services to international clients in the pharmaceutical, agrochemical, and related industries. Our unique blend of expertise in high-tech natural product chemistry, as well as medicinal chemistry, empowers Bicoll to enhance both the quality and quantity of drug discovery pipelines for our partners' candidate portfolios. Bicoll's mission is to drive innovation while addressing the pressing needs of diverse industries, exemplified by our pioneering work in natural sweet modulation and other areas of research.

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