

Beating back bitter taste in medicine: Scientists discover that diabetes drug is partially effective as a bitter blocker

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The bitter taste of certain drugs is a barrier to taking some medications as prescribed, especially for people who are particularly sensitive to bitter taste. Published in [*Clinical Therapeutics*](#), a team from the Monell Chemical Senses Center found that the diabetes drug rosiglitazone could partially block the bitter taste of some especially bad-tasting medications. Rosiglitazone could be added in small doses to other medicines, to make them less bitter and taste better.

This result provided new information. "To our knowledge, there are no previous reports on the bitter-blocking effect of this diabetes drug," said first author Ha Nguyen, Ph.D., Monell Postdoctoral Fellow.

Rosiglitazone was identified as a potential bitter blocker using tests of human cells from taste tissue, a method of screening developed by Monell and DiscoveryBiomed, Inc., now Eurofins.

The team conducted taste-testing experiments on research participants in the United States and Poland, and they found that adding rosiglitazone to the medicines reduced bitterness for many, but not all, research participants.

"People differ, and we need to test many types of people from different parts of the world to make sure that efforts to reduce bitterness and make medicines easier to take work well for all people," said senior author Danielle Reed, Ph.D., Monell Chief Science Officer.

These results suggest having more blockers to choose from will help entirely suppress the bitterness of many types of medicines for a wide range of populations and ancestries. Mixtures of several blockers may help attain a low-to-zero-bitterness standard for even the most bitter-tasting medicines.

"Although [rosiglitazone](#) was only partially effective as a bitter blocker in this study, modifying these drugs to improve potency, palatability, and efficacy may allow us to find a better version of this drug," said Nguyen. "Rosiglitazone is valuable as a bitter blocker because it is potentially effective in most people and is part of a class of drugs already approved worldwide for treating diabetes."

Next steps in this line of research include a similar study that measures bitter blocking in several hundred African and Asian immigrants to add to the diversity of participants' ancestries with regard to [bitter taste](#).

In addition to Nguyen and Reed, co-authors are Cailu Lin, Ph.D., Ivona Sasimovich, Katherine Bell, Amy Huang, Nancy E. Rawson, Ph.D., all from Monell, and Emilia Leszkowicz, Ph.D., from the University of Gdańsk.

More information: Ha Nguyen et al, Thiazolidinediones Are Partially Effective Bitter Blockers, *Clinical Therapeutics* (2024). [DOI: 10.1016/j.clinthera.2024.02.002](#)

Provided by Monell Chemical Senses Center

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