

Bitter taste receptors may hold the key to managing preterm labor

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This could be good news for those trying to prevent preterm labor: New research published online in *The FASEB Journal* suggests that exposing bitter taste receptors in the uterus to certain substances can stop many unwanted contractions that occur during premature labor.

Provided by Federation of American Societies for Experimental Biology

"The biological mechanism of labor initiation remains unknown, and a large percentage of preterm pregnancies do not respond well to current medications," said Ronghua Zhuge, Ph.D., associate professor within the University of Massachusetts Medical School's Department of Microbiology and Physiological Systems in Worcester, Massachusetts. "The bitter taste receptors that we have found on uterine muscle could be one more piece of the puzzle to understand the onset of labor, both at term and preterm, and develop new therapeutics for [preterm labor](#)."

Zhuce and colleagues attached strips of human and mouse uterine myometrium tissue (also known as smooth muscle) to a machine that measured their contraction efforts. The researchers first exposed the tissue to native hormones such as oxytocin and chemical compounds to make it contract, mimicking normal or [premature labor](#). They then exposed the tissue to bitter substances. By activating the [bitter taste receptors](#) in the uterus, the bitter substances relaxed the contracted uterine muscle tissue more completely than the current drugs used to prevent preterm labor in humans. The researchers also found that giving mice bitter substances before they showed any premature contractions prevented them from having early deliveries.

More information: Kaizhi Zheng et al, Bitter taste receptors as targets for tocolytics in preterm labor therapy, *The FASEB Journal* (2017). DOI: [10.1096/fj.201601323RR](https://doi.org/10.1096/fj.201601323RR)

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