# Microbiome-Based Intervention For Intrauterine Growth Restriction

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## SUMMARY

UCLA researchers in the Department of Integrative Biology and Physiology have identified one of the underlying causes of intrauterine growth restriction, which may be treated with microbiome-based therapeutics.

## BACKGROUND

Intrauterine growth restriction (IUGR), defined as failure to maintain expected utero growth potential due to genetic or environmental factors, poses infants at increased risk for perinatal mortality and long-term morbidity compared with infants with normal in utero growth. The incidence of IUGR varies among populations and increases with decreasing gestational age, and may be caused by fetal, placental, and maternal factors. However, no underlying cause is identified in nearly 40% of infants with IUGR.

## INNOVATION

Researchers at UCLA have revealed that dysbiosis of the maternal microbiome during pregnancy alters the normal functions of uterine natural killer cells (uNKs), and impairs placental angiogenesis, leading to downstream abnormalities in the fetal development. They proposed that live microbes or microbial metabolites can be used to develop microbiome-based therapeutics for treating IUGR, preeclampsia, or other related obstetric complications.

## APPLICATIONS

- Treatment for intrauterine growth restriction, preeclampsia, or related obstetric issues

## ADVANTAGES

- Novel microbiome therapeutic for treating intrauterine growth restriction (IUGR)

## STATE OF DEVELOPMENT

Ongoing experiments have planned to test in mouse model.

## PATENT STATUS

| Country | Type | Number | Dated | Case |
|---|---|---|---|---|
| United States Of America | Published Application | 2022-017585 | 06/09/2022 | 2019-531 |

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## OTHER INFORMATION

### KEYWORDS

microbiome, microbiota, intrauterine growth restriction, IUGR, preeclampsia, uterine natural killer cells

### CATEGORIZED AS

- **Medical**
  - Disease: Women's Health

### RELATED CASES

2019-531-0



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