

Implementing microbiome diagnostics in personalized medicine: Rise of pharmacomicrobiomics

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A new Commentary identifies three actionable challenges for translating pharmacomicrobiomics to personalized medicine in 2020.

Pharmacomicrobiomics is the study of how microbiome variations within and between individuals affect drug action, efficacy, and toxicity. This personalized medicine horizon scanning is featured in *OMICS: A Journal of Integrative Biology*.

Ramy Aziz and Marwa ElRakaiby, Cairo University (Egypt), Mariam Rizkallah, Leibniz Institute for Prevention Research and Epidemiology (Bremen, Germany), and Rama Saad, University of Illinois (Chicago) coauthored the article entitled "Translating Pharmacomicrobiomics: Three Actionable Challenges/Prospects in 2020." The authors ask the question, "Has the time not come for routine [microbiome](#) testing and establishing pharmacomicrobiomic guidelines, at least for some drugs, in 2020?"

The Commentary describes three actionable challenges to translate pharmacomicrobiomics from laboratory bench to patient bedside and personalized [medicine](#) innovation: (1) systematic high-throughput microbiome screening studies; (2) phage-enabled precision microbiome engineering/editing; and (3) pharmamicrobiomic testing in the clinic.

Vural Özdemir, MD, Ph.D., Editor-in-Chief of *OMICS: A Journal of Integrative Biology* states: "Clinical pharmacomicrobiomics is an exciting and overdue health care innovation field, especially for pharmaceuticals with well-documented drug-microbiome interactions.

Pharmacomicrobiomics has come a long way since its debut in 2010.

Over the next decade, a growing number of microbiome diagnostics will likely be utilized to choose the right drug, at the right dose, for the right patient, toward personalized medicine. Pharmacomicrobiomics can include both interventional (e.g., microbiome editing) and diagnostic approaches (microbiome testing) for personalized/precision medicine. Authored by pioneers of pharmacomicrobiomics, the new OMICS horizon scanning article offers new insights on the road ahead for microbiome diagnostics in the clinic."

More information: Ramy K. Aziz et al, Translating Pharmacomicrobiomics: Three Actionable Challenges/Prospects in 2020, *OMICS: A Journal of Integrative Biology* (2020). [DOI: 10.1089/omi.2019.0205](https://doi.org/10.1089/omi.2019.0205)

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