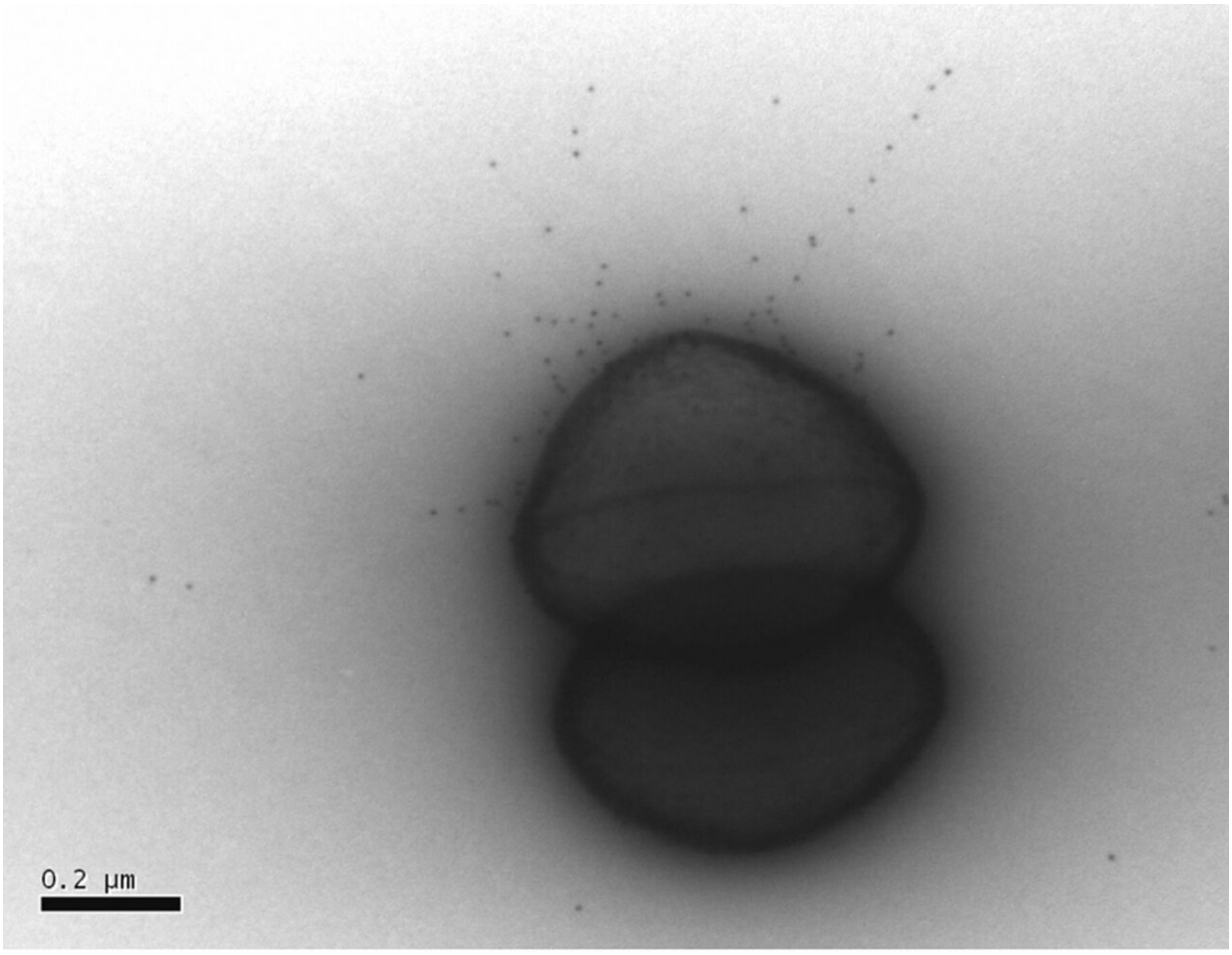
Host-microbe interactions in the gut

August 19 2019, by Leigh Macmillan



L. rhamnosus GG

Although the mutually beneficial relationship between human beings and gut microbes is clear, how we—the host—affect the functions of gut

microbial communities remains poorly understood.

Fang Yan, MD, Ph.D., and colleagues previously showed that p40, a protein secreted by the commensal microbe *Lactobacillus rhamnosus GG* (LGG), protects intestinal epithelial cells against inflammation. They have now used p40 production as a model to investigate the feedback symbiosis between intestinal epithelial cells and LGG.

They found that intestinal epithelial cell-derived factors promote p40 synthesis and secretion by LGG and enhance LGG-stimulated protective responses. They further demonstrated that a molecular chaperone in extracellular vesicles secreted by intestinal epithelial cells promotes production of p40 by LGG.

The findings, reported in *Infection and Immunity*, reveal a previously unrecognized role for intestinal epithelial cells in reinforcing microbiota functions that benefit the host. The insights support efforts to develop microbiota-based therapies for maintaining intestinal health and preventing or treating inflammatory bowel diseases.

More information: Luyao Yang et al. Production of a Functional Factor, p40, by *Lactobacillus rhamnosus GG* Is Promoted by Intestinal Epithelial Cell-Secreted Extracellular Vesicles, *Infection and Immunity* (2019). DOI: 10.1128/IAI.00113-19

Provided by Vanderbilt University

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