

Abstract Submitted
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Effect of peristalsis in balance of intestinal microbial ecosystem

SEYED AMIR MIRBAGHERI, HENRY C FU, University of Utah — A balance of microbiota density in gastrointestinal tracts is necessary for health of the host. Although peristaltic flow made by intestinal muscles is constantly evacuating the lumen, bacterial density stay balanced. Some of bacteria colonize in the secreted mucus where there is no flow, but the rest resist the peristaltic flow in lumen and maintain their population. Using a coupled two-dimensional model of flow induced by large amplitude peristaltic waves, bacterial motility, reproduction, and diffusion, we address how bacterial growth and motility combined with peristaltic flow affect the balance of the intestinal microbial ecosystem.

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