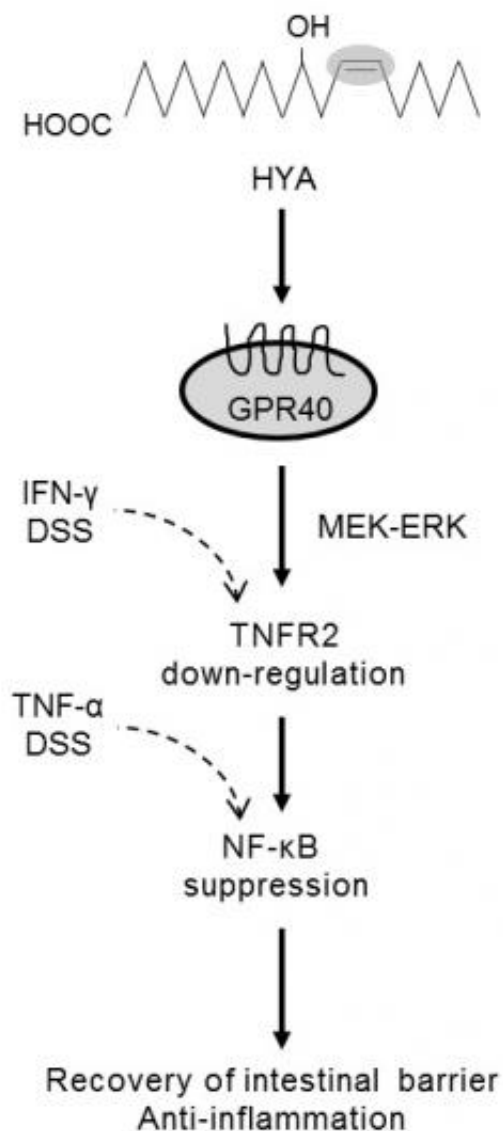


A microbial metabolite of linoleic acid ameliorates intestinal inflammation

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HYA, a microbial metabolite of linoleic acid, ameliorates intestinal barrier damage. Credit: Tanebe et al, *The Journal of Biological Chemistry*, DOI:

10.1074/jbc.M114.610733, FIG.3A

Inflammatory bowel diseases (IBDs), including Crohn disease and ulcerative colitis, are hard to completely cure. Globally, IBDs affect more than 4 million people, today. However, Professor Soichi Tanabe (Graduate School of Biosphere Science, Hiroshima University) and his collaborators have demonstrated that 10-hydroxy-cis-12-octadecenoic acid (HYA), a gut microbial metabolite of linoleic acid, has a suppressive effect on intestinal inflammation. HYA is expected to be practically applied as a functional food.

The results of this group's research were published in *The Journal of Biological Chemistry* as "A gut microbial metabolite of linoleic acid, 10-hydroxy-cis-12-octadecenoic acid, ameliorates intestinal epithelial barrier impairment partially via GPR40-MEK-ERK pathway" [DOI: 10.1074/jbc.M114.610733](https://doi.org/10.1074/jbc.M114.610733).

IBD patients characteristically demonstrate increased expression of [tumor necrosis factor](#) receptor-2 and an upregulated inflammatory NF- κ B pathway. Professor Tanabe and his colleagues demonstrated that HYA binds to a G protein-coupled receptor (GPR40) and ameliorates intestinal epithelial barrier impairment in an intestinal epithelial cell line, Caco-2 cells; oral administration of HYA also alleviates colitis in mice.

The physiological activity of gut microbial metabolites has recently attracted considerable attention. HYA may be useful in the treatment of tight junction-related disorders, such as IBD.

Provided by Hiroshima University

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