

FULL TEXT LINKS



Review [Pharmacol Ther.](#) 2016 Aug;164:144-51. doi: 10.1016/j.pharmthera.2016.04.007.

Epub 2016 Apr 23.

# Benefits of short-chain fatty acids and their receptors in inflammation and carcinogenesis

Sathish Sivaprakasam <sup>1</sup>, Puttur D Prasad <sup>1</sup>, Nagendra Singh <sup>2</sup>

Affiliations

PMID: 27113407 PMCID: [PMC4942363](#) DOI: [10.1016/j.pharmthera.2016.04.007](#)

## Abstract

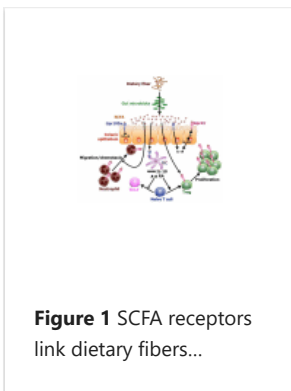
Epidemiological studies have linked increased incidence of inflammatory diseases and intestinal cancers in the developed parts of the world to the consumption of diets poor in dietary fibers and rich in refined carbohydrates. Gut bacteria residing in the intestinal lumen exclusively metabolize dietary fibers. Butyrate, propionate and acetate, which are collectively called short-chain fatty acids (SCFAs), are generated by fermentation of dietary fibers by gut microbiota. Evidences indicate that SCFAs are key players in regulating beneficial effect of dietary fibers and gut microbiota on our health. SCFAs interact with metabolite-sensing G protein-coupled receptors GPR41, GPR43 and GPR109A expressed in gut epithelium and immune cells. These interactions induce mechanisms that play a key role in maintaining homeostasis in gut and other organs. This review summarizes the protective roles of GPR41, GPR43 and GPR109A in dietary fibers-, gut microbiota- and SCFAs-mediated suppression of inflammation and carcinogenesis in gut and other organs.

**Keywords:** Dietary fibers; Gut microbiota; Inflammation and cancer; Short-chain fatty acid receptors; Short-chain fatty acids.

Copyright © 2016 Elsevier Inc. All rights reserved.

[PubMed Disclaimer](#)

## Figures



**Figure 1** SCFA receptors link dietary fibers...

## Related information

[MedGen](#)

[PMC images](#)

[PubChem Compound \(MeSH Keyword\)](#)

## LinkOut - more resources

### Full Text Sources

[Elsevier Science](#)

[Europe PubMed Central](#)

[Ovid Technologies, Inc.](#)

[PubMed Central](#)

### Other Literature Sources

[scite Smart Citations](#)

### Medical

[MedlinePlus Health Information](#)