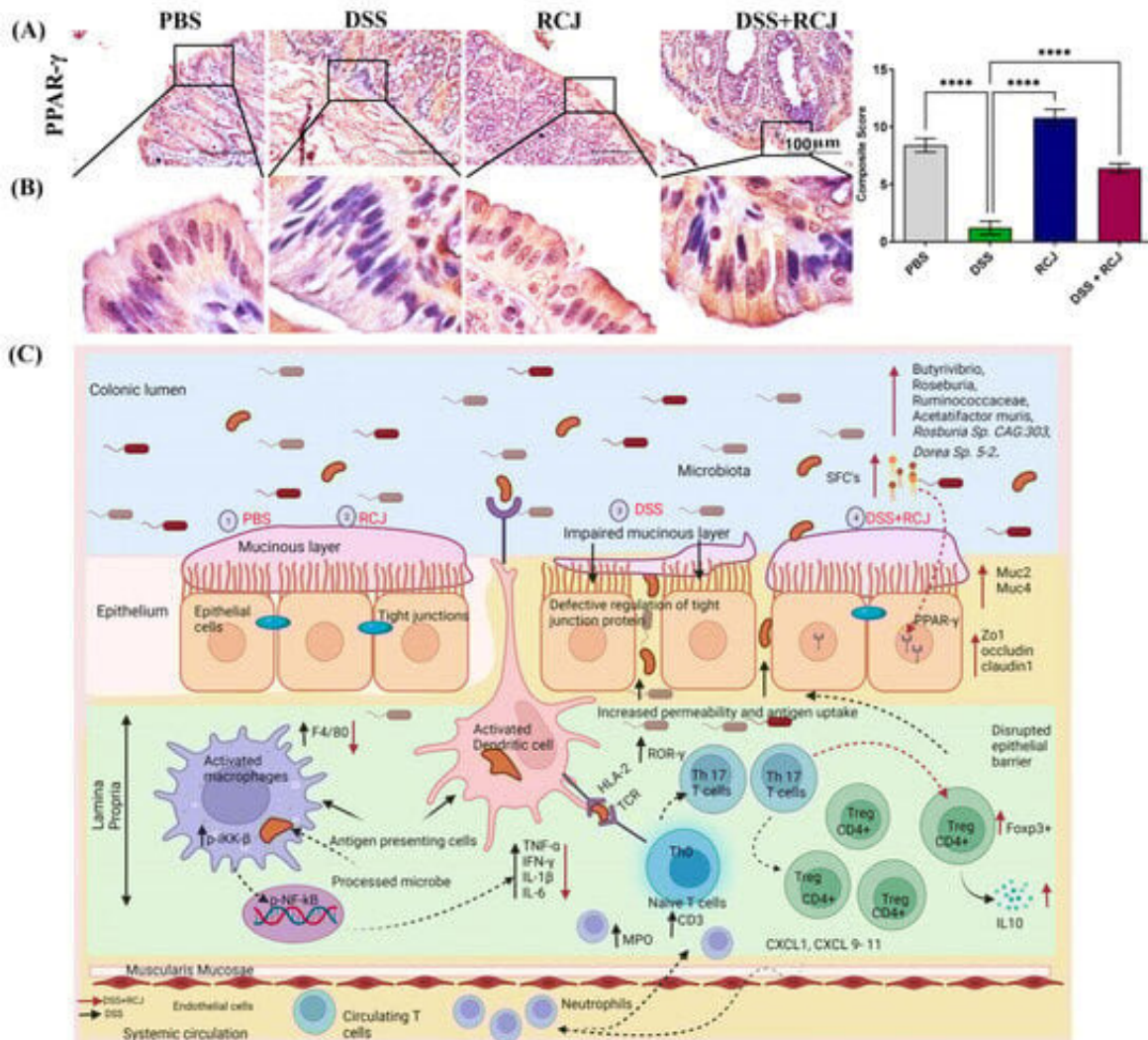


Researchers find evidence a natural juice can help gut health

April 17 2024, by Eric Slusher



IHC staining for anti-inflammatory mediators PPAR-γ indicative of butyrate presence. Credit: *International Journal of Molecular Sciences* (2023). DOI: 10.3390/ijms25010539

A team of researchers at the University of Missouri is uncovering how the juice from red cabbage, long used in traditional medicine, can alleviate inflammation-associated digestive health conditions such as inflammatory bowel disease (IBD) in mice, offering hope to the estimated 3 million Americans who suffer from IBD, including Crohn's disease and ulcerative colitis.

"Red cabbage juice-mediated gut microbiota modulation improves intestinal epithelial homeostasis and ameliorates colitis" was [published](#) in the *International Journal of Molecular Sciences*.

IBD is characterized by chronic inflammation in the digestive tract. Primary symptoms include acute abdominal pain, weight loss, anemia and diarrhea. In extreme cases, IBD can increase the risk of death if left untreated.

Santayana Rachagani, an associate professor in Mizzou's Department of Veterinary Medicine and Surgery and the Roy Blunt NextGen Precision Health building, leads a team breaking new ground in the field of nutraceuticals—the pharmaceutical effects from natural foods—to modulate gut microbiota and alleviate inflammation-associated conditions such as IBD. Rachagani's team found that red cabbage juice boasts a diverse array of [bioactive compounds](#) that improved gut health and alleviated the symptoms of IBD in mice.

"Red cabbage juice alters the composition of gut microbiota by increasing the abundance of good bacteria, resulting in increased production of short chain [fatty acids](#) and other bacteria derived metabolites ameliorating inflammation," Rachagani said. "These changes in the gut microbiota are associated with improved gut barrier function, enhanced colon repair and anti-oxidative effects, ultimately mitigating intestinal damage and colonic inflammation."

Mice are widely used to study IBD because colitis in mice closely resembles human ulcerative colitis. As a result, the findings provide potentially valuable insights into the benefits of red cabbage juice in humans with colonic inflammation and other symptoms of IBD.

Nagabhishek Sirpu Natesh, the post-doctoral fellow working on this project, said red cabbage juice treatment increased good gut bacteria, which in turn triggered an anti-inflammatory receptor in the colons of mice. Moreover, red cabbage juice boosted regulatory T cells, promoting an anti-inflammatory immune balance, further lowering colonic inflammation.

The current primary pharmacological approach for treating IBD is monoclonal antibodies that address inflammation. However, most patients find that this treatment loses effectiveness over time. As a result, researchers are increasingly searching for solutions that address the [molecular mechanism](#) in the gut that causes IBD in the first place.

"These findings offer new insights into the mechanisms underlying red cabbage juice's therapeutic efficacy in ameliorating IBD," Rachagani said. "Its ability to modulate [gut microbiota](#), activate anti-inflammatory pathways and enhance immune regulation underscores its potential as a valuable therapeutic agent for IBD and related inflammatory disorders."

Not only do bioactive compounds promote the growth of good gut bacteria, but [red cabbage](#) juice is also an excellent source of dietary fiber, further enhancing its potential for gut health.

More information: Emily Jean Wilson et al, Red Cabbage Juice-Mediated Gut Microbiota Modulation Improves Intestinal Epithelial Homeostasis and Ameliorates Colitis, *International Journal of Molecular*

Sciences (2023). [DOI: 10.3390/ijms25010539](https://doi.org/10.3390/ijms25010539)

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