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Brightseed Review Shows Hemp Hulls' Potential to Support Gut Health

Paper published in the Journal and Dietary Supplements illustrates the positive impact of bioactives and fiber found in hemp hulls on digestive function

SAN FRANCISCO (June 12, 2024) – [Brightseed®](#), the bioactives company, announces the publication of its narrative article in the *Journal of Dietary Supplements* that showcases the nutritional value and proposed health benefits of hemp hull and its bioactive compounds, particularly amplifying its impact on gut, liver, and metabolic health^{1,2}. The article, titled, "[Health-Promoting Opportunities of Hemp Hull: The Potential of Bioactive Compounds](#)", shows how the nutrient and bioactive profile of hemp hull has human health benefits, as well as opportunities in functional foods and supplements that go beyond what research has previously captured.

Historically, the hemp seed has been recognized for its oil, protein, and micronutrient content. However, the benefits of the hemp hull, the outer shell of the hemp seed, have become a prominent focus in nutrition research. The dietary fiber found within hemp hulls offers a unique opportunity to support gut health by modulating gut microbes and, alongside bioactives, shows potential to synergistically improve gut barrier function, pending further research.

"We were extremely eager to provide a state-of-the-science update on this emerging, upcycled ingredient," said Swati Kalgaonkar, co-author of the article and director of medical, scientific, and regulatory affairs for Brightseed. "Whether it's the ingredient's bioactive compounds, dietary fiber, or proteins and lipids, hemp hulls truly have a fascinating future, offering unique, nutritional benefits and physiological effects that help us find nature's answers to health."

Pulling from more than 20 years of peer-reviewed publications, the article explains the full array of micro- and macronutrients within hemp hulls, as well as proposed health benefits of hemp hull bioactive compounds, leveraging cell culture and animal model data. Two crucial bioactive compounds within hemp hulls, N-trans caffeoyltyramine (NCT) and N-trans feruloyltyramine (NFT)³, have been found to influence gene expression that governs gut permeability.

Key findings:

- While whole foods are undoubtedly great sources of bioactive compounds, fractions of whole foods resulting from food processing can offer concentrated sources of these bioactives.
- The most abundant nutrient in hemp hulls is dietary fiber and the common bioactives, known to impart human health benefits, include phenolic compounds such as flavones, flavonols, and terpenes.

- Within the category of bioactives, the two most abundant hydroxycinnamic acid amides in hemp hulls are N-trans-caffeoyltyramine (NCT) and N-trans-feruloyltyramine (NFT). These bioactives have been demonstrated to enhance the action of hepatocyte nuclear factor 4 alpha (HNF4 α), a signaling compound that plays a role in regulating gluconeogenesis, lipid metabolism, and metabolism in the liver, thereby playing a vital role in overall metabolic health.
- In addition to bioactives found within, the dietary fiber component of hemp hull fiber offers prebiotic properties. In vitro studies have demonstrated an increase in alpha diversity as well as short-chain fatty acid production, both linked to improved host health.

“The nutrients and bioactive compounds in hemp hulls show potential to support human health when consumed intact or as concentrated or isolated fractions,” Kalgaonkar said. “It’s clear that hemp hull-derived ingredients can have immense impact within the functional food and dietary supplement industries, and these findings will open up a whole new world for the health-conscious consumer.”

Brightseed is bringing these innovative, nutritional benefits to gut health-focused brands with its hemp hull-derived fiber ingredient [Bio Gut Fiber](#), which helps elevate functional foods and beverages delivering consumers an efficient and unique source of dietary fiber and support for gut health benefits, powered by bioactives. This was developed after Brightseed’s cutting-edge AI-driven computational platform, [Forager®](#), which identifies bioactives in nature and their health benefits, identified hemp hulls as one of the richest sources of health-promoting compounds NCT and NFT. To learn more, visit [BrightseedBio.com](#).

About Brightseed

Brightseed®, the bioactives company, is a *World Economic Global Innovator* that illuminates nature to restore human health. Brightseed’s proprietary AI, Forager®, accelerates bioactive discovery, biological validation, and ingredient formulation from years to months, rapidly revealing new connections between nature and humanity. Brightseed produces clinically proven bioactives for dietary supplements, food & beverage CPG, specialty nutrition and medical foods to power proactive health worldwide. Learn more at [brightseedbio.com](#).

References

1. Lee S-H, Veeriah V, Levine F (2022) A potent HNF4 α agonist reveals that HNF4 α controls genes important in inflammatory bowel disease and Paneth cells. PLoS One 17:e0266066. <https://doi.org/10.1371/journal.pone.0266066>
2. Babeu J-P, Boudreau F (2014) Hepatocyte nuclear factor 4-alpha involvement in liver and intestinal inflammatory networks. World J Gastroenterol 20:22–30. <https://doi.org/10.3748/wjg.v20.i1.22>
3. Leonard W, Zhang P, Ying D, Fang Z (2022) Tyramine-derived hydroxycinnamic acid amides in plant foods: sources, synthesis, health effects and potential applications in

food industry. Crit Rev Food Sci Nutr 62:1608–1625.

<https://doi.org/10.1080/10408398.2020.1845603>

4. Leonard W, Zhang P, Ying D, et al (2022) Post-extrusion physical properties, techno-functionality and microbiota-modulating potential of hempseed (*Cannabis sativa* L.) hull fiber. Food Hydrocolloids 131:107836.

<https://doi.org/10.1016/j.foodhyd.2022.107836>

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