



## Brightseed Preclinical Data Shows Potential for Bioactive Compounds To Support Gut Barrier Function

*Newly published study in the Journal of Food Bioactives finds plant compounds discovered by Forager® A.I. in hemp hull play a role in maintaining a healthy gut*

**SAN FRANCISCO, Feb 8, 2023** – Brightseed, [the bioactives company](#), today announced preclinical data in the peer-reviewed [Journal of Food Bioactives](#) showing that two bioactive compounds found in hemp hulls, N-trans caffeoyltyramine (NCT) and N-trans feruloyltyramine (NFT), have potential to support gut barrier function.<sup>1</sup>

Gut health has been shown to be central to the body's overall health, impacting the immune system and the gut-brain axis. The gut barrier plays a key role in maintaining overall gut health, as it enables nutrient absorption and acts as a barrier against pathogens and toxins.<sup>2</sup> Increased permeability of the intestinal epithelium, commonly referred to as "[leaky gut](#)," may be associated with impaired gut health. This publication adds to the growing body of research on the potential health benefits of bioactives, naturally occurring compounds that can have powerful effects on supporting human health.

In the *in vitro* study, NCT and NFT were found to improve impaired gut barrier function in human primary intestinal epithelial cells culture using [RepliGut®](#), a well-established and validated model for intestinal epithelium. Administering both NCT and NFT to inflamed cells demonstrated a statistically significant reversal of impaired intestinal permeability and transepithelial electrical resistance (TEER).

"This publication is the latest validation of Brightseed's approach to discover solutions in nature to restore human health," said Jim Flatt, CEO and co-founder of Brightseed. "These insights into how NCT and NFT can support gut function, and specifically gut barrier strength by restoring a healthy epithelium barrier, provide a strong foundation for the clinical research that is underway to substantiate the benefits of natural ingredients for personalized and proactive health solutions."

Brightseed's first-of-its-kind A.I. platform, [Forager®](#), identified NCT and NFT's activity on a key biological receptor governing gut health. The two compounds have been shown to act as agonists for the HNF4α protein, whose decreased expression in the gut is linked to a high fat diet and has been shown to be associated with poor intestinal health and decreased gut barrier integrity<sup>3-5</sup>

In scouring the plant kingdom for novel sources of NCT and NFT, Forager® identified hemp hulls as one of the richest sources of these bioactive compounds. In fall 2022, Brightseed launched [Brightseed Bio 01™](#), an upcycled hemp-based dietary fiber ingredient containing the two bioactive compounds, NCT and NFT to support gut strength. Formulated to optimize bioactive content while retaining the hemp hull's fiber and nutrient profile, Brightseed Bio 01 is designed to fortify cereals, granolas, nutrition bars, functional beverages and other applications.



“We’re excited to continue applying these rigorous research insights to develop a portfolio of bioactive ingredients to meet important consumer health areas,” said Sofia Elizondo, COO and co-founder of Brightseed. “Brightseed’s focus on computational bioactive discovery paired with advanced metabolomics is enabling the functional food, beverage and dietary supplements industries to unlock the full potential of bioactives for human health.”

To learn more, visit <https://www.brightseedbio.com/bioactives>.

### **About Bioactives**

Bioactives are small molecule compounds produced by plants, fungi, and microbes that grow in and adapt to environments that present a wide range of challenges to their survival. Bioactives also benefit the health of humans – they are the enlivening caffeine in tea, the powerful antioxidant lycopene in tomatoes or curcumin in turmeric, and they also inform active ingredients in medicines. Science has long known that bioactives are critical to human health, yet the vast majority remain unknown and uncharted – often referred to as the “dark matter” of nutrition. Brightseed’s A.I., Forager®, discovers bioactives in nature and maps them to human health outcomes at a rate and accuracy that was previously impossible.

### **About Brightseed**

Brightseed is a pioneer in biosciences and artificial intelligence (A.I.) that illuminates nature to restore human health. Brightseed’s proprietary A.I., Forager®, accelerates bioactive discovery, biological validation and ingredient formulation from years to months, rapidly revealing new connections between nature and humanity. Through Forager® and clinical evaluation, Brightseed partners with organizations across the consumer health continuum to offer insight into the world of bioactives and health solutions. Visit [www.brightseedbio.com](http://www.brightseedbio.com) to learn more.

### **References**

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