



BiomEdit Awarded Grant to Develop Microbiome-Based Solution to Reduce Methane Emissions and Enhance Production Efficiency of Cattle in Africa and South Asia

Animal health biotech BiomEdit and Bill & Melinda Gates Foundation work together to mitigate the contribution of cattle to agricultural greenhouse gases (GHG) while increasing food security and the economic livelihood of small-scale producers

FISHERS, IND. (November 1, 2023) -- BiomEdit, an emerging animal health biotechnology company, announced today that it has received a \$4.5M grant from the Bill & Melinda Gates Foundation to accelerate research and development of a portfolio of novel microbiome-based solutions to reduce methane emissions that also enhance feed efficiency for beef and dairy cattle. This innovation has the potential to significantly impact agricultural greenhouse gas (GHG) emissions and enhance the livelihood of small-scale producers and pastoralists in sub-Saharan Africa and South Asia, where cattle are a vital source of income.

As the number one agricultural source of greenhouse gases worldwide, ruminants like cattle produce methane as part of their normal digestive process. Methane is a major contributor to climate change and each year a single cow alone will belch about 220 pounds of methane. According to the International Livestock Research Institute (ILRI), livestock contribute up to 80 percent of developing countries' agricultural GDP and they serve as an important source of nutrition and livelihood for small-scale producers and pastoral communities. Finding a way to reduce methane emissions in native cattle in their local habitat while increasing productivity is key to environmental and economic sustainability, particularly for Africa and South Asia.

BiomEdit's solutions will target the rumen microbiome, which is the community of microorganisms that live in a cow's digestive tract. The rumen microbiome plays a key role in digestion, with specific microorganisms responsible for methane production. The company will take a multi-pronged approach to leverage natural and synthetic probiotics and bioactives that robustly reduce methane emissions and increase cattle performance by inhibiting energy losses through methanogenesis and enhancing production of volatile fatty acids (VFA, the main source of energy from the rumen). Pathways to administer the innovations could take the form of feed additives, feed supplements, veterinary biologics, or pharmaceuticals.

"To make a meaningful impact on climate change, there must be a simultaneous benefit of reducing methane emission in cattle plus redirecting the spare energy, which would otherwise go to creating methane, to increasing feed efficiency so everyone can benefit from nutritious meat and milk - no matter where they are in the world. The answer is found through the microbiome and synthetic biology," said Aaron Schacht, CEO of BiomEdit. "We are grateful for the Bill & Melinda Gates Foundation's belief in our Methane Reduction R&D program, and excited to partner with them to enable both large- and small-scale producers to benefit from the innovations."

A range of current strategies for methane reduction are in development or on the market, however, direct inhibition of methanogens has shown the largest effect on mitigating enteric methane emissions. An issue with many products currently available is farmers must fund an additional input to gain methane emission reduction and feed efficiency, so they do not often see a sufficient return on investment. Developing methane mitigation products that can improve production efficiency and pay for themselves will make this approach financially feasible for farmers, encouraging them to participate.

BiomEdit's Development Platform and People

BiomEdit's research is based on their unique platform combining well-curated microbial reference libraries, microbiome analytics, synthetic biology, and artificial intelligence (AI) to develop novel biologic products targeting significant challenges facing animals, humans, and our shared habitat.

As pioneers in the application of AI and machine learning in animal health, patterns and relationships are identified in the data to generate novel insights into how an animal's microbiome shifts as it transitions from health to disease and back again - leading to a deeper level of knowledge about how the microbiome functions as an ecosystem.

The BiomEdit team is a diverse group of innovators with an entrepreneurial spirit: scientists with deep expertise in microbiome science and product development. The Methane Reduction R&D program team alone holds over 50 patent applications and more than 200 peer-reviewed scientific publications. The company also plans to collaborate with leading experts in rumen microbiome analysis at key academic research institutions on this project.

Keeping livestock producers' livelihoods in mind, BiomEdit announced in October a first-of-its-kind [collaboration with Athian](#), the world's first cloud-based carbon marketplace for the livestock industry, to develop sustainability protocols and products in parallel. The company helps livestock producers capture and claim carbon credits earned through sustainability efforts by aggregating, validating, and certifying greenhouse gas (GHG) reductions, and monetizing those reductions for the producer through the sale of carbon offsetting credits.

About BiomEdit

BiomEdit is an emerging animal health biotechnology company that leverages a unique platform combining the leading science of the microbiome with synthetic biology to innovate novel animal health products to address challenges in livestock production and pet health. Founded through a strategic partnership in 2022 between Elanco Animal Health (NYSE: ELAN) and Ginkgo Bioworks (NYSE: DNA), the company was born from a carve-out of technology and assets from Elanco combined with access to Ginkgo's leading cell programming platform technology. BiomEdit is a private venture funded by Anterra Capital, Viking Global Investors, Ferment, and Nutreco Ventures. In 2022, BiomEdit was recognized by S&P Global Animal Health as Best Start-up in Animal Health in its annual animal health industry awards. www.biomedit.com

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