

**Akkermansia sp., Strain KLE1605**

**Catalog No. HM-844**

**For research use only. Not for use in humans.**

**Contributor:**

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**Manufacturer:**

BEI Resources

**Product Description:**

Bacteria Classification: *Akkermansiaceae*, *Akkermansia*

Species: *Akkermansia sp.*

Strain: KLE1605

Original Source: *Akkermansia sp.* (*A. sp.*), strain KLE1605 was isolated in April 2011 from human feces in the United States.<sup>1,2</sup>

Comments: *Akkermansia sp.*, strain KLE1605 ([HMP ID 1326](#)) is a reference genome for [The Human Microbiome Project](#) (HMP). HMP is an initiative to identify and characterize human microbial flora. The complete genome of *Akkermansia sp.*, strain KLE1605 was sequenced at the Genome Institute at [Washington University](#) (GenBank: [AMCH00000000](#)).

Note: HMP material is taxonomically classified by the depositor. Quality control of these materials is only performed to demonstrate that the material distributed by BEI Resources is identical to the deposited material.

*Akkermansia* species are Gram-negative, non-motile, strictly anaerobic oval-shaped mucolytic bacteria in pure culture.<sup>3</sup> *Akkermansia* species are predominant members in the gastrointestinal tract within a broad range of animals.<sup>4</sup> It is significantly underrepresented in patients with colitis and Crohn's disease, suggesting the importance of *Akkermansia* species as biomarkers for a healthy intestine.<sup>5,6</sup>

**Material Provided:**

Each vial contains approximately 0.5 mL of bacterial culture in Brain Heart Infusion broth with 2 µg/mL porcine gastric mucin (Type III) supplemented with 15% glycerol.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

**Packaging/Storage:**

HM-844 was packaged aseptically in cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

**Growth Conditions:**

Media:

Brain Heart Infusion broth with 2 µg/mL porcine gastric mucin (Type III) or equivalent

Brain Heart Infusion agar with 2 µg/mL porcine gastric mucin (Type III) or equivalent

Note: Growth is optimal in mucin however, mucin can be replaced with N-acetylglucosamine or N-acetylgalactosamine.<sup>1</sup>

Incubation:

Temperature: 37°C

Atmosphere: Anaerobic

Propagation:

1. Keep vial frozen until ready for use, then thaw.
2. Transfer the entire thawed aliquot into a single tube of broth.
3. Use several drops of the suspension to inoculate an agar slant and/or plate.
4. Incubate the tube, slant and/or plate at 37°C for 2 to 3 days.

**Citation:**

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH as part of the Human Microbiome Project: *Akkermansia sp.*, Strain KLE1605, HM-844."

**Biosafety Level: 2**

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. [Biosafety in Microbiological and Biomedical Laboratories \(BMBL\)](#). 6th ed. Washington, DC: U.S. Government Printing Office, 2020.

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**References:**

1. Witt, K., Personal Communication.
2. [HMP ID 1326](#) (*Akkermansia* sp., strain KLE1605)
3. Derrien, M., et al. "*Akkermansia muciniphila* gen. nov., sp. nov., a Human Intestinal Mucin-Degrading Bacterium." *Int. J. Syst. Bacteriol.* 54 (2004): 1469-1476. PubMed: 15388697.
4. Belzer, C. and W. M. de Vos. "Microbes Inside- From Diversity to Function: The Case of *Akkermansia*." *ISME J.* 6 (2012): 1449-1458. PubMed: 22437156.
5. Png, C. W., et al. "Mucolytic Bacteria with Increased Prevalence in IBD Mucosa Augment *In Vitro* Utilization of Mucin by Other Bacteria." *Am. J. Gastroenterol.* 105 (2010): 2420-2428. PubMed: 20648002.
6. Swidsinski, A., et al. "Acute Appendicitis is Characterized by Local Invasion with *Fusobacterium nucleatum/necrophorum*." *Gut* 60 (2011): 34-40. PubMed: 19926616.

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