

Product Information

Anti-*Akkermansia Muciniphila* Antibody

Produced in Rabbit, IgG Fraction of Antiserum

SAB4200870

Product Description

Anti-*Akkermansia muciniphila* antibody is developed in rabbits using inactivated *A. muciniphila* bacteria (ATCC BAA-835). Whole antiserum is purified using protein A immobilized on agarose to provide the IgG fraction of antiserum.

Anti-*Akkermansia muciniphila* antibody recognizes *A. muciniphila* lysate and whole dead bacteria. The antibody may be used in various immunochemical techniques including immunoblotting. Detection of *A. muciniphila* bands by immunoblotting is specifically inhibited by the immunogen.

Akkermansia muciniphila is a Gram negative, oval shaped, non-motile, non-spore forming strictly anaerobic bacteria.¹ *A. muciniphila* colonized in the mucus layer of the human intestine niche. *A. muciniphila* inhabits the gastrointestinal tracts of most of healthy adults and represents 1-4% of the total fecal microbiota starting from early life.² It is one of the top 20 most abundant species detectable in the human gut.³ *A. muciniphila* is able to degrade mucin, a key mucus component, using the enzymes sialidase and fucosidase, and utilize it as a source of carbon and nitrogen.² Mucin degradation by *A. muciniphila* results in the production of short-chain fatty acids (SCFA), that become available metabolites to the host and also can stimulate the host immune system. Moreover, SCFA promotes the growth and metabolic activity of mucus-associated gut microbiota preventing the pathogenic bacteria from reaching the intestinal cells.⁴

It was found that *A. muciniphila* abundance in the gut was correlated to a healthy intestine and inversely correlated to many disease conditions.² In comparison to healthy controls, *A. muciniphila* levels were low in intestinal disorders, such inflammatory bowel disease (IBD), but also in other conditions, such as autism, atopy, and obesity.^{2,5-8}

Therefore, *A. muciniphila* was suggested to serve as a marker of healthy intestine. In addition, ongoing research identified *A. muciniphila* as a promising potential probiotic that can be administrated for the treatment of diseases such as, colitis, metabolic syndromes, immune diseases and cancer. However more research is needed to verify the safety of oral administration of *A. muciniphila* in humans.³

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting

A working dilution of 1:500-1:1000 is recommended using *Akkermansia muciniphila* lysate.

Note: In order to obtain best results in different techniques and preparations it is recommended to determine optimal working concentration by titration test.

References

1. Derrien M., et al., *Int J Syst Evol Microbiol.*, **54**: 1469-76 (2004).
2. Ottman N., et al., *Best Pract Res Clin Gastroenterol.*, **31**: 637-42 (2017).
3. Zhang T., et al., *Microb Biotechnol.*, **12**: 1109-125 (2019).
4. Belzer C. and de Vos WM., *ISME J.*, **6**: 1449-58 (2012).
5. Png CW., et al., *Am J Gastroenterol.*, **105**: 2420-28 (2010).
6. Zhang H., et al., *Proc Natl Acad Sci USA.*, **106**: 2365-70 (2009).
7. Santacruz A., et al., *Br J Nutr.*, **104**: 83-92 (2010).
8. Wang L., et al., *Appl Environ Microbiol.*, **77**: 6718-21 (2011).

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