Product Information Sheet for HM-1189

## Bifidobacterium angulatum, Strain F16_22

## Catalog No. HM-1189

## For research use only. Not for human use.

## Contributors:

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## Manufacturer:

BEI Resources

## Product Description:

Bacteria Classification: Bifidobacteriaceae, Bifidobacterium
Species: Bifidobacterium angulatum
Strain: F16_22 (also referred to as F16 \#22)
Original Source: Bifidobacterium angulatum (B. angulatum), strain F16_22 was isolated from human stool in Guelph, Ontario, Canada. ${ }^{1}$
Comments: B. angulatum, strain F16_22 (HMP ID 1998) 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 B. angulatum, strain F16_22 is currently being sequenced at the Broad Institute.
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.
B. angulatum are anaerobic, non-motile, Gram-positive bacteria commonly found in the healthy adult human gut. ${ }^{3-5}$ They promote gut health by producing and utilizing prebiotics as well as being a probiotic. ${ }^{4-6}$ More recently, B. angulatum has been shown to produce gamma-aminobutyric acid (GABA) suggesting a function in the gut-brain axis. ${ }^{7}$

## Material Provided:

Each vial contains approximately 0.5 mL of bacterial culture in Modified Reinforced Clostridial broth supplemented with 10\% glycerol.

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

## Packaging/Storage:

HM-1189 was packaged aseptically in plastic cryovials. The product is provided frozen and should be stored at $-60^{\circ} \mathrm{C}$ 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:
Modified Reinforced Clostridial broth or equivalent

Tryptic Soy agar with 5\% defibrinated sheep blood or equivalent
Incubation:
Temperature: $37^{\circ} \mathrm{C}$
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 $37^{\circ} \mathrm{C}$ for 1 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: Bifidobacterium angulatum, Strain F16_22, HM-1189."

## Biosafety Level: 1

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. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

## Disclaimers:

You are authorized to use this product for research use only. It is not intended for human use.

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## References:

1. Allen-Vercoe, E., Personal Communication.
2. HMP ID 1998 (Bifidobacterium angulatum, Strain F16_22)
3. Scardovi, V. and F. Crociani. "Bifidobacterium catenulatum, Bifidobacterium dentium and Bifidobacterium angulatum: Three New Species and Their Deoxyribonucleic Acid Homology Relationships." Int. J. Syst. Bacteriol. 24 (1974): 6-20.
4. Cronin, M., et al. "Progress in Genomics, Metabolism and Biotechnology of Bifidobacteria." Int. J. Food Microbiol. 149 (2011): 4-18. PubMed: 21320731.
5. Leahy, S. C., et al. "Getting Better with Bifidobacteria." J. Appl. Microbiol. 98 (2005): 1303-1315. PubMed: 15916644.
6. Rabiu, B. A., et al. "Synthesis and Fermentation Properties of Novel Galacto-Oligosaccharides by BetaGalactosidases from Bifidobacterium Species." Appl. Environ. Microbiol. 67 (2001): 2526-2530. PubMed: 11375159.
7. Dyachkova, M. S., et al. "Draft Genome Sequences of Bifidobacterium angulatum GT102 and Bifidobacterium adolescentis 150: Focusing on the Genes Potentially Involved in the Gut-Brain Axis." Genome Announc. 3 (2015): e00709-15. PubMed: 26139716.

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