1. Product Information

Product name	Bifidobacterium Broth
Catalogue number	AS-1139
Product type	Dehydrated culture medium, non-selective
Usage rate	78.65 g per litre of purified water
Final pH (25 °C)	6.8 ± 0.2
Appearance, powder	Cream to yellow, homogeneous, free-flowing
Appearance, prepared	Amber, clear solution
Storage, powder	10–30 °C, tightly closed, dry, protected from light (hygroscopic)
Shelf life	See expiry date on the product label and batch COA

2. Intended Use

Bifidobacterium Broth is used for the cultivation and maintenance of bifidobacteria, particularly *Bifidobacterium longum* subsp. *infantis* (formerly *B. infantis*). Typical uses include probiotic product development and quality control, fermented dairy and food research, gut microbiota research and teaching.

For laboratory microbiological testing, quality control and research use only. Not intended for direct use in food, human or veterinary therapeutic applications, diagnosis, or consumption.

3. Mode of Action

Tryptone and peptone supply peptides, amino acids and nitrogen. Yeast extract supplies B vitamins, nucleotides and trace nutrients. Tomato juice solids provide growth-stimulating factors for bifidobacteria and lactic acid bacteria, and dextrose is the fermentable energy source. Polysorbate 80 supplies oleic acid, which these organisms incorporate into their cell membranes.

The medium is non-selective and contains no reducing agent, so it must be incubated anaerobically.

4. Typical Composition (g/L)

Ingredient	g/L
Tryptone	20.00
Peptone	10.00
Yeast extract	10.00
Tomato juice solids	16.65
Dextrose (glucose)	20.00
Polysorbate 80 (Tween 80)	2.00
Total	**78.65**

Formula may be adjusted and/or supplemented to meet performance specifications.

5. Preparation

1. Suspend 78.65 g of powder in 1 litre of purified or distilled water.
2. Heat with frequent mixing until completely dissolved.
3. Dispense into tubes or flasks.

4. Sterilise by autoclaving at 121 °C for 15 minutes.
5. Cool before use. Stored medium should be heated in a boiling water bath for 10–15 minutes and cooled without shaking, to remove dissolved oxygen before inoculation.

Optional: for a solid medium, add 15.0 g/L agar before heating. For demanding strains, 0.5 g/L L-cysteine hydrochloride may be added as a reducing agent.

6. Incubation and Interpretation

Atmosphere	Anaerobic (e.g. anaerobic jar or cabinet)
Temperature	35–37 °C
Time	24–72 hours, depending on strain and application
Positive result	Turbidity (growth) in the broth

Growth in this broth does not identify the organism. Confirm identity by Gram stain (Gram-positive, irregular or branched rods), catalase test (negative) and further biochemical or molecular methods.

7. Quality Control

Recommended QC organisms and acceptance criteria. Results for each batch are reported on the Certificate of Analysis.

QC organism	Strain	Inoculum (CFU)	Expected growth
Bifidobacterium longum subsp. *infantis*	ATCC 25962	50–100 (≤ 100)	Good to luxuriant
Bifidobacterium bifidum	ATCC 15696	50–100 (≤ 100)	Good to luxuriant
Bifidobacterium breve	ATCC 15698	50–100 (≤ 100)	Good to luxuriant

Incubation: anaerobic, 35–37 °C, 24–48 hours.

8. Storage and Stability

- Dehydrated medium: store at 10–30 °C in a tightly closed container in a dry place, protected from light. The powder is hygroscopic: reseal immediately after use. Do not use if caked or discoloured.
- Prepared medium: store at 2–8 °C, protected from light. The shelf life of prepared medium should be established by the user.

9. Limitations

- The medium is non-selective. Lactic acid bacteria and other anaerobes present in a sample will also grow.
- Bifidobacteria are strict or near-strict anaerobes. Poor anaerobiosis is the most common cause of poor growth.
- For selective enumeration of bifidobacteria in milk products, use the method in ISO 29981 | IDF 220 (TOS-propionate agar with mupirocin).
- Strain-to-strain variation in growth rate is normal.

10. Comparable Products

Manufacturer	Product	Relationship
HiMedia Laboratories	M1395 Bifidobacterium Broth	Same published formulation

11. Related Standards (for user reference)

- ISO 29981:2010 | IDF 220:2010. Milk products: Enumeration of presumptive bifidobacteria, colony count technique at 37 °C.

12. Literature and References

1. Atlas RM. *Handbook of Microbiological Media*, 4th ed. CRC Press, Boca Raton; 2010.
2. Wehr HM, Frank JF (eds). *Standard Methods for the Examination of Dairy Products*, 17th ed. American Public Health Association, Washington DC; 2004.
3. Mattarelli P, Biavati B, Holzapfel WH, Wood BJB (eds). *The Bifidobacteria and Related Organisms: Biology, Taxonomy, Applications*. Academic Press, London; 2018.
4. Mattarelli P, Bonaparte C, Pot B, Biavati B. Proposal to reclassify the three biotypes of *Bifidobacterium longum* as three subspecies. *Int J Syst Evol Microbiol*. 2008;58:767–772.
5. Roy D. Technological aspects related to the use of bifidobacteria in dairy products. *Lait*. 2005;85:39–56.
6. HiMedia Laboratories. Technical Data, M1395 Bifidobacterium Broth.

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