



Hanks' Balanced Salt Solution (HBSS)

For research use only

Catalogue number: BI-1403

Product Description

Hank's Balanced Salt Solution (HBSS) was developed by Hanks and Wallace (1949) for use in cells maintained in the less CO₂ environment or CO₂ free environment. HBSS is intended for use in the maintenance of mammalian cells where a chemically defined, balanced salt solution provides an environment that will maintain the structural and physiological integrity of cells in vitro. In summary, the roles of a balanced salt solution are:

- Maintaining of intra- and extracellular osmotic balance,
- Providing water and inorganic ions that are essential for cells metabolism,
- Providing energy for cells metabolism,
- Buffering capacity to maintain the physiological pH (6.6 – 6.7) of the environment.

HBSS is used for a variety of cell culture applications, such as washing cells before dissociation, transporting cells or tissue samples, diluting cells for counting, and preparing reagents. Formulations without calcium and magnesium (BI-1403) are required for rinsing chelators from the culture before cell dissociation. Formulations with calcium and magnesium are generally used as transport media or for reagent preparation.

This specification is produced in two different volumes of 100ml (BI-1403-01) and 500ml (BI-1403-05).

Specification

- The product contains sodium bicarbonate and phenol red.
- Without calcium chloride, magnesium sulfate.
- With HEPES. HEPES (4-(2-hydroxyethyl)-1-piperazineethanesulfonic acid), a zwitterionic organic chemical buffering agent is used for better maintaining the physiological pH changes in carbon dioxide concentrations

Notes

- Respect storage conditions of the product.
- Do not use the product after its expiry date.
- Protect the product from light.
- Manipulate the product in aseptic conditions (e.g. under laminar air flow).
- To avoid contamination, wear clothes adapted to the manipulation of the product (e.g. gloves, mask, and hygiene cap).
- Supplements, such as antibiotics, should be added as sterile supplements to the medium.
- Storage conditions and shelf-life of the supplemented product will be affected by the nature of the supplements.
- Medium should be clear and free of particulate and flocculent material. Does not use, if the medium is cloudy or contains a precipitate.
- In the case of using the medium in several steps, notice that after the first discharge, the air-to-medium ratio will increase inside. So, the medium will become alkaline earlier than expected. It's recommended to fill the remaining medium in 50ml sterile tubes and close tightly. Therefore, it can last until the expiry date.
- For research use only.



Quality Control

- **Appearance:** Red, clear solution
- **pH=** 6.6 - 6.7
- **Sterility:** tested
- **Storage:** 2-8° C; Protect from light
- **Shelf life:** 6 months
- **Inorganic Salts:** No Calcium, No Magnesium

References

1. Hanks, J. (1976) Hanks' Balanced Salt Solution and pH Control. Tissue Culture Association Manual. 3, 3.

Citations

1. Kashiri, H., et al. "Isolation and long-term culture of neural stem cells from *Acipenser persicus* (Borodin, 1897)." Iranian Journal of Fisheries Sciences 17.2 (2018): 369-380.