Blasticidin S HCl

Catalog Number R21001
Doc. Part No. R210.pps **Pub. No.** MAN0001536 **Rev.** A.0

WARNING! Read the Safety Data Sheets (SDSs) and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves. Safety Data Sheets (SDSs) are available from **thermofisher.com/support**.

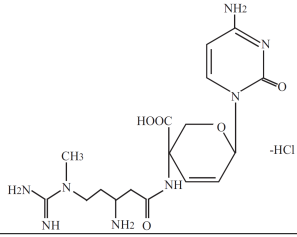
Product description

Blasticidin S HCl is a nucleoside antibiotic isolated from *Streptomyces griseochromogenes* which inhibits protein synthesis in both prokaryotic and eukaryotic cells. Resistance is conferred by expression of either one of two Blasticidin S deaminase genes: *BSD* from *Aspergillus terreus* or *bsr* from *Bacillus cereus*. These deaminases convert Blasticidin S to a nontoxic deaminohydroxy derivative.

Contents and storage

Contents	Amount	Storage
Blasticidin S HCl	50 mg supplied as white, solid powder.	Shipped at room temperature. Store at –20°C. Do not store in a frost-free freezer.

Specifications

Merck Index	12: 1350
Molecular weight	458.9
Formula	$C_{17}H_{26}N_8O_5$-HCl
E. coli selection	50–100 µg/mL in low salt (<5 g NaCl/L) LB medium
Yeast selection	25-300 µg/mL in appropriate medium
Mammalian cells selection	2–10 µg/mL in appropriate medium (varies with cell line)
Blasticidin structure	

Blasticidin handling guidelines

- Always wear gloves, mask, a laboratory coat, and safety glasses when handling Blasticidin-containing solutions.
- Weigh out Blasticidin and prepare solutions in a hood.

Stock solutions guidelines

- Prepare Blasticidin stock solutions of 5–10 mg/mL by dissolving Blasticidin in sterile water and filter-sterilize the solution. Blasticidin is soluble in water and acetic acid.
- Aliquot in small volumes appropriate for one time use and store at 4°C (short term) or at –20°C (long-term). Do not subject stock solutions to freeze/thaw cycles (do not store in a frost-free freezer).
- Aqueous stock solutions are stable for 1–2 weeks at 4°C and 6–8 weeks at –20°C. Medium containing Blasticidin can be stored at 4°C for up to 2 weeks.
- pH of the aqueous solution should not exceed 7.0 to prevent inactivation of Blasticidin.
- On thawing, use what you need and discard the unused portion.

Blasticidin selection in *E. coli*

For selection of Blasticidin-resistant *E. coli*, use Low Salt LB medium (10 g Tryptone, 5 g NaCl, 5 g Yeast Extract) containing 50–100 µg/mL Blasticidin. Depending on the bacterial strain that is used, optimize the Blasticidin concentration. If you get a lawn of bacteria on your Low Salt LB plate instead of individual bacterial colonies, increase the Blasticidin concentration to 100 µg/mL in the plate.

Note: The salt concentration of the medium must remain low (<90 mM) and the pH should not exceed 7.0. Failure to lower the salt content of your LB medium results in nonselection due to Blasticidin inhibition unless a higher Blasticidin concentration is used.

Blasticidin selection in yeast

The concentration of Blasticidin required for selection in yeast varies depending on the species, strain, and type of medium used. Use 25–300 µg/mL Blasticidin for selection in yeast. We recommend performing a kill curve for each species, strain, and medium that is used to determine the appropriate Blasticidin concentration to use for selecting resistant cells.

Blasticidin selection in mammalian cells

The concentration of Blasticidin that is required for selection in mammalian cells varies depending on the cell line used. Use 2–10 µg/mL Blasticidin for selection in mammalian cells. We recommend that you perform a kill curve as described in the following procedure to determine the appropriate Blasticidin concentration to use for selecting resistant cells.

Determine Blasticidin sensitivity

1. Plate cells at approximately 25% confluence. Prepare a set of 6 plates. Allow cells to adhere overnight.
2. The next day, substitute culture medium with medium containing varying concentrations of Blasticidin (for example, 0, 2, 4, 6, 8, and 10 µg/mL Blasticidin).
3. Replenish the selective media every 3–4 days, then observe the percentage of surviving cells.
4. Determine the appropriate concentration of Blasticidin that kills the cells within 10–14 days after addition of the antibiotic.

Ordering information

Media for bacteria and mammalian cells as well as transformation products (yeast and bacteria) and transfection reagents are available from **thermofisher.com**.

Limited product warranty

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Revision history: Pub. No. MAN0001536

Revision	Date	Description
A.0	27 June 2016	Updated legal and regulatory information.
—	20 February 2007	Baseline for this revision.

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