

Blasticidin S HCl

Part no. 100005796

MAN0000780

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A11139-03

A11139-02

Size:

10 × 1 mL

20 mL

Store at -5°C to -20°C

(protected from light)

Description

Blasticidin S HCl is a nucleoside antibiotic isolated from *Streptomyces griseochromogenes* which inhibits protein synthesis in both prokaryotic and eukaryotic cells (3, 4). Resistance is conferred by expression of one of two Blasticidin S deaminase genes: BSD from *Aspergillus terreus* (2) or bsr from *Bacillus cereus* (1). These deaminases convert Blasticidin S to a nontoxic deaminohydroxy derivative (Izumi et al., 1991).

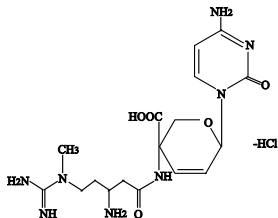
Specifications

Concentration:	10 mg/mL in 20 mM HEPES, pH 7.2–7.5
Molecular Weight:	458.9
Formula:	$C_{17}H_{26}N_8O_5-HCl$
<i>E. coli</i> Selection:	50–100 µg/mL in low salt LB medium (NaCl concentration ≤5 g/L)
Yeast Selection:	25–300 µg/mL in suitable medium
Mammalian Cell Selection:	2–10 µg/mL in appropriate medium (varies with cell line)

Intended Use: For research use only.

Caution: Not intended for human or animal diagnostic or therapeutic use.

Blasticidin Structure



Caution

Toxic if swallowed. Contains Blasticidin S. Avoid contact with skin and eyes. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately.

Storing Blasticidin

- Do not subject Blasticidin solution to multiple freeze-thaw cycles (**do not store in a frost-free freezer**).
- When stored properly at -5°C to -20°C , Blasticidin is stable for up to 9 months. Store medium containing Blasticidin at 4°C for up to 2 weeks.
- Upon thawing, use what you need and discard any unused portion.

Blasticidin Selection in *E. coli*

For selection of Blasticidin-resistant *E. coli*, use Low Salt LB medium (10 g Tryptone, **5 g sodium chloride**, 5 g yeast extract) containing 50–100 $\mu\text{g}/\text{mL}$ Blasticidin. Optimize the Blasticidin concentration for the bacterial strain being used. If a lawn of bacteria forms on the Low Salt LB plate instead of individual bacterial colonies, increase the Blasticidin concentration in the plates to 100 $\mu\text{g}/\text{mL}$.

Note: The salt concentration of the medium must remain low (<90 mM). Failure to lower the salt content of your LB medium inhibits Blasticidin, and prevents selection 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 a range of 25–300 $\mu\text{g}/\text{mL}$ Blasticidin for selection in yeast. We recommend performing a kill curve for each species, strain, and medium used to determine the appropriate Blasticidin concentration to use for selecting resistant cells.

Blasticidin Selection in Mammalian Cells

The Blasticidin concentration required for selection in mammalian cells varies depending on the cell line used. Use 2–10 $\mu\text{g}/\text{mL}$ Blasticidin for selection in mammalian cells. We recommend performing a kill curve as described below to determine the appropriate Blasticidin concentration to use for selecting resistant cells.

Determining blasticidin sensitivity

1. Plate cells at approximately 25% confluency. 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 (e.g. 0, 2, 4, 6, 8, 10 $\mu\text{g}/\text{mL}$ Blasticidin).
3. Replenish the selective media every 3–4 days, and 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.

Additional Products

Media for bacteria and mammalian cells as well as transformation products (yeast and bacteria) and transfection reagents are available from Life Technologies. Vectors containing Blastidicin selection marker are also available from Life Technologies. Visit www.lifetechnologies.com for details.

References

1. Izumi, M., Miyazawa, H., Kamakura, T., Yamaguchi, I., Endo, T., and Hanaoka, F. (1991). Blastidicin S-Resistance Gene (*bsr*): A Novel Selectable Marker for Mammalian Cells. *Exp. Cell Res.* 197, 229–233.
2. Kimura, M., Takatsuki, A., and Yamaguchi, I. (1994). Blastidicin S Deaminase Gene from *Aspergillus terreus* (*BSD*): A New Drug Resistance Gene for Transfection of Mammalian Cells. *Biochim. Biophys. ACTA* 1219, 653–659.
3. Takeuchi, S., Hirayama, K., Ueda, K., Sakai, H., and Yonehara, H. (1958). Blastidicin S, A New Antibiotic. *The Journal of Antibiotics, Series A* 11, 1-5.
4. Yamaguchi, H., Yamamoto, C., and Tanaka, N. (1965). Inhibition of Protein Synthesis by Blastidicin S. I. Studies with Cell-free Systems from Bacterial and Mammalian Cells. *J. Biochem (Tokyo)* 57, 667–677.

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