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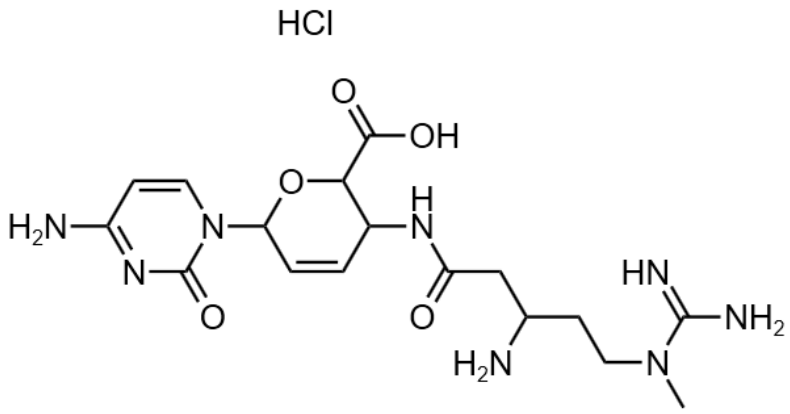
V 1.0.0

Blasticidin S

Product description

Blasticidin S is a nucleoside antibiotic derived from *Streptomyces griseochromogenes*. It specifically inhibits protein synthesis in both prokaryotic and eukaryotic organisms by interfering with peptide bond formation in the ribosome. Blasticidin S is primarily used for selecting transfected cells through the bsr or BSD resistance genes. It has a rapid and potent mode of action, where even low concentrations of the antibiotic can lead to rapid cell death.

Specifications

Cat. No.	GM-040404-1 / GM-040404-2
Packaging	10 mg; 5 × 10 mg
CAS	3513-03-9
Molecular Formula	$C_{17}H_{26}N_8O_5 \cdot HCl$
Molecular Weight	458.9
Purity	>95% (HPLC)
Concentration	10 mg/mL (in HEPES buffer, pH 7.5)
Structure	
Storage Conditions	Store at -25°C to -15°C for up to 2 years. Avoid repeated freeze-thaw cycles.

Usage Instructions

1 Recommended Concentrations

1.1 **Escherichia coli**

E. coli has slightly lower sensitivity to Blasticidin S, but transformants exhibit resistance. Use low-salt LB medium (pH 8) for selection, with a concentration range of 50-100 μg/mL Blasticidin S. A high pH enhances the activity of Blasticidin S.

1.2 **Mammalian Cells**

The working concentration of Blasticidin S in mammalian cells ranges from 1-50 μg/mL. For initial experiments, it is

recommended to determine the optimal concentration using a kill curve. Suggested working concentrations for some mammalian cells:

Cell Line	Species	Tissue	Medium	Blasticidin S Concentration (μg/mL)
HeLa	Human	Uterus	DMEM	3-10
293	Human	Kidney	DMEM	3-10
B16	Mouse	Melanoma	RPMI	3-10
PC1.0	Hamster	Adenocarcinoma	RPMI	10-30

2 Procedure (Selection of Stable Mammalian Transfectants)

Blasticidin S is typically used at a concentration of 10 μg/mL. Plasmids carrying the bsr or BSD gene are transfected into cells, which are then incubated in normal growth medium containing Blasticidin S to select for stable transfectants.

2.1 48 hours post-transfection, passage the cells into fresh medium containing the appropriate concentration of Blasticidin S. (Note: Antibiotics work best when cells are in active division. High cell density reduces antibiotic efficiency. When passaging, ensure cell coverage does not exceed 25%.)

2.2 Every 3-4 days, remove the medium and replace it with fresh medium containing the antibiotic.

2.3 After 7 days, check for colony formation. Depending on the host cell type and transfection/selection efficiency, colony formation may take an additional week or longer.

2.4 Transfer 5-10 resistant clones to 35 mm cell dishes and maintain in selection medium for 7 days. Subsequently, test using a cytotoxicity assay.

Notes

1. Blasticidin S is a hazardous compound. Avoid contact with eyes, skin, and clothing.

1. This product is for research use only.

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