

# Blasticidin Powder

Selection antibiotic; cell culture tested

Catalog # ant-bl-10p

<http://www.invivogen.com/blastcidin>

For research use only

Version # 16D20-MM

## PRODUCT INFORMATION

### Contents

1 g of blasticidin hydrochloride supplied as a white powder

### Storage and stability

- Blasticidin powder is shipped at room temperature. Upon receipt it should be stored at 4°C. The expiry date is specified on the product label.
- Store blasticidin solutions at 4°C or -20°C. Do not use blasticidin solutions after the expiry date on the product label. Avoid repeated freeze-thaw cycles.

## QUALITY CONTROL

Each lot is thoroughly tested to ensure the absence of lot-to-lot variation.

- Purity: ≥95% (HPLC)
- Endotoxin level: < 1 EU/mg
- Physicochemical characterization (pH, appearance)
- Cell culture tested: potency validated in blasticidin-sensitive and blasticidin-resistant mammalian cell lines
- Non-cytotoxicity of trace contaminants: absence of long-term effects confirmed in blasticidin-resistant cells

## BACKGROUND

Blasticidin is a selection antibiotic that acts on both eukaryotic and prokaryotic cells. It is a peptidyl nucleoside antibiotic isolated from the culture broth of *Streptomyces griseochromogenes*. It specifically inhibits protein synthesis in both prokaryotes and eukaryotes by inhibiting peptide bond formation in the ribosomal machinery. Three blasticidin resistance genes have been cloned and sequenced: an acetyl transferase gene, *bls* from a blasticidin producer strain<sup>1</sup>, and two deaminase genes, *bsr* gene from *Bacillus cereus*<sup>2</sup>, and *BSD* gene from *Aspergillus terreus*<sup>3</sup>.

Both *bsr* and *BSD* genes are used as dominant selectable markers for gene transfer experiments in mammalian and plant cells. Although blasticidin was developed as a selection agent for mammalian cells, it can also be used in *E. coli*.

## SAFETY CONSIDERATIONS

Blasticidin is a harmful compound. Refer to safety data sheet for handling instructions.

## GENERAL GUIDELINES

Successful transfection is influenced by many factors. The health and viability of the cell line, the quality of the nucleic acid used, the transfection reagent, the duration of transfection, and the presence or absence of serum can all play a part.

## METHOD

### Preparation of blasticidin solution

1. Resuspend blasticidin in HEPES buffer (5 g/l, pH 7.2+/- 0.1) at a concentration of 10 mg/ml.
2. Sterile filter the solution using a 0.22 µm sterile filter.
3. Store at 4°C for immediate use or -20°C for long-term storage.

## SELECTION CONDITIONS

### - *Escherichia coli*

*E. coli* is poorly sensitive to blasticidin, but transformants resistant to blasticidin can be selected on low salt LB agar medium (pH 8) supplemented with 100 µg/ml blasticidin. High pH enhances the activity of blasticidin. For optimum results, we recommend using **Fast-Media® Blas**.

### - Mammalian cells

The working concentration of blasticidin for mammalian cell lines varies from 1 to 10 µg/ml, in a few cases up to 30 µg/ml. In a starting experiment we recommend to determine optimal concentrations of antibiotic required to kill your host cell line. After treatment, cell death occurs rapidly, allowing the selection of transfected cells with plasmids carrying the *bsr* or *BSD* genes in as little as 7 days post-transfection. Suggested concentrations of blasticidin for selection in some examples of mammalian cells are listed below.

Cell line	Medium	Blasticidin conc.	Ref.
CHO (Chinese hamster ovarian cells)	DMEM	5-10 µg/ml	4, 5
HEK293 (Human embryonic kidney cells)	DMEM	5-15 µg/ml	6, 7
HeLa (Human uterine cells)	DMEM	2.5-10 µg/ml	8, 9
Neuro2a (Mouse neuroblasts)	DMEM	30 µg/ml	10
THP-1 (Human monocytes)	RMPI	10µg/ml	11

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11. Schepetkin IA. et al., 2009. Immunomodulatory activity of oenothien B isolated from *Epilobium angustifolium*. J Immunol. 183:6754-66.

## TECHNICAL SUPPORT

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## RELATED PRODUCTS

Product	Description	Catalog Code
<b>Other selection antibiotics</b>		
G418	Selection antibiotic for the <i>neo</i> gene	ant-gn-1
Hygromycin B Gold	Selection antibiotic for the <i>hph</i> gene	ant-hg-1
Puromycin	Selection antibiotic for the <i>pac</i> gene	ant-pr-1
Zeocin	Selection antibiotic for the <i>Sh ble</i> gene	ant-bl-1
<b>Fast-Media® Blas</b>		
Fast-Media® Blas Agar	Solid agar selection medium containing blasticidin	fas-bl-s
Fast-Media® Blas TB	Liquid TB selection medium containing blasticidin	fas-bl-l
<b>Plasmids encoding the <i>bsr</i> gene</b>		
pMOD2-Blast	Plasmid encoding a synthetic <i>bsr</i> gene	pmod2-blast
pSELECT-blasti-LacZ	LacZ-expression plasmid selectable with blasticidin	psetb-lacz
pSELECT-blasti-mcs	Expression plasmid selectable with blasticidin	psetb-mcs
pUNO1-bsr	Expression plasmid selectable with blasticidin	puno1-bsr

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