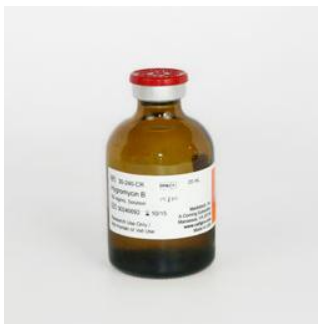


Molecular structure



Hygromycin B solution
(Cat. No. 30-240-CR), 20 mL

Hygromycin B

Hygromycin B is an aminoglycoside antibiotic used for the selection and maintenance of prokaryotic and eukaryotic cells transformed with *hph*, the hygromycin B resistance gene. Produced by *Streptomyces hygroscopicus*, this bacteriocidal antibiotic inhibits protein synthesis in bacteria, fungi, and higher eukaryotic cells that do not carry the *hph* gene.

Inhibition of protein synthesis is due to mistranslation resulting from the disruption of translocation at the 70S ribosome. The gene *hph* encodes a 39 kDa protein (hygromycin phosphotransferase) that inactivates hygromycin B through phosphorylation and restores protein synthesis.

The appropriate working concentration of hygromycin B for selection will vary with cell type, media, growth conditions, and the cell's metabolic rate and cycle stage. For example, cell sensitivity is dependent on the pH of the medium, such that sensitivity increases directly with pH. Antibiotic potency is also dependent on cell density; a higher dosage may be required to kill susceptible cells in high density cultures. This characteristic may be due to detoxification from limited endogenous phosphotransferase.

To overcome these variables and ensure success, the working concentration should ideally be determined experimentally for each unique culture system, as well as whenever new variables are introduced. The working concentration may be determined by performing a dose response curve.

Product Specifications

Mode of Action	Binds to the 30S ribosomal subunit and affects the fidelity of translation
Spectrum	Gram (+) bacteria, Gram (-) bacilli aerobes and facultative anaerobes, only; higher and lower eukaryotes
Microbiological Potency	50 mg/mL in PBS
Conferred Resistance	Aminoglycoside-modifying enzymes, a change in cell permeability, or a change in ribosomal structure
Molecular Weight	527.54
Formula	$C_{20}H_{37}N_3O_{13}$
Appearance	Amber-colored liquid (light yellow to dark brown)
Working Concentration	50 µg/mL to 1 mg/mL
Storage and Stability	Refrigerated (2°C to 8°C) Protected from light Do not autoclave

Ordering Information

Cat. No.	Description	Unit Size	Qty/Pk
30-240-CR	Hygromycin B solution	20 mL	1