Hygromycin B (solid)

Aminoglycoside Antibiotic

Hygromycin B is an aminoglycoside antibiotic produced by *Streptomyces hygroscopicus*. It is widely used in molecular biology and biotechnology as a selective agent for cells that carry the hygromycin resistance gene (hph). Its mechanism of action involves inhibiting protein synthesis by interfering with the translocation step in the ribosome, particularly by stabilizing peptidyl-tRNA in the ribosomal A-site.

Key features and applications include:

- **Mechanism:** Inhibits protein synthesis by targeting ribosomal translocation.
- **Cell Selection:** Used to select genetically modified cells expressing the hygromycin resistance gene in both bacterial and eukaryotic systems.
- **Plant Biology:** Commonly used to select transgenic plants, aiding in crop improvement and genetic studies.
- **Fungal Research:** Applied in transformation protocols for filamentous fungi.
- **Gene Expression Studies:** Facilitates screening of cells with integrated foreign DNA.
- **Ribosomal Function Research:** Valuable in studying translation and antibiotic resistance mechanisms.

Relevant disease states include:
While Hygromycin B is primarily used as a research tool, its antibiotic properties have been explored in the context of:

- **Bacterial Infections:** Due to its broad-spectrum activity.
- **Parasitic Diseases:** It has shown anthelmintic activity, meaning it can act against parasitic worms.
- **Antibiotic Resistance Studies:** Used to investigate resistance mechanisms in pathogens.

Ordering Information

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ALX-380-309A-G001	1g

Manuals, SDS & CofA

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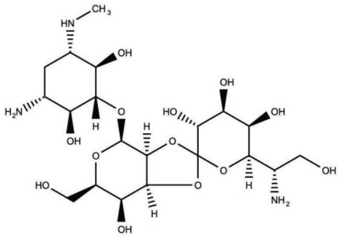

HN
CH3
OH
H2N
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HO
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OH
NH2

Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Handling	The compound is unstable in solutions, freshly prepared is recommended.
Short Term Storage	-20°C
Long Term Storage	-20°C
Shipping	Ambient Temperature

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	Antihelmycin
Appearance	White to light yellow
CAS	31282-04-9
Formula	$C_{20}H_{37}N_3O_{13}$
Identity	Determined by 1H NMR.
MW	527.52
Purity	≥98% (HPLC)
Solubility	Soluble in DMSO (100 mg/mL or 189.57 mM) or water (50 mg/mL or 94.78 mM).

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