

# G-418 Sulfate[Geneticin]

Selection antibiotic; cell culture tested  
Catalog (REF) :IC-1808A ; IC-1808C

## PRODUCT INFORMATION

Contents:

G418 is supplied as a sterile filtered solution at 100 mg/ml in HEPES buffer. This product is available in 3 pack sizes:

- IC-1808-A:1 ml (100mg/ml)
- IC-1808-B:2\*1 ml (100mg/ml)
- IC-1808-C:5\*1 ml (100mg/ml)

Storage and stability:

- G418 is shipped at room temperature. Upon receipt it should be stored at 4 °C. It may be stored at -20 °C. Avoid repeated freeze-thaw cycles.
- The expiry date is specified on the product label.

## QUALITY CONTROL

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

- Purity: ≥ 90% (HPLC)
- Endotoxin level: < 0.5 EU/mg
- Physicochemical characterization (pH, appearance)
- Cell culture tested: potency validated in G418-sensitive and G418-resistant mammalian cell lines
- Non-cytotoxicity of trace contaminants: absence of long-term effects confirmed in G418-resistant cells

## DESCRIPTION

G418, also known as G418 sulfate and Geneticin, is used for the selection and maintenance of eukaryotic cells expressing the *neo* gene<sup>1</sup>. It is an aminoglycoside antibiotic similar in structure to gentamycin B1. G418 is produced by *Micromonospora rhodorangea*. This antibiotic blocks polypeptide synthesis and protein elongation in eukaryotic cells by binding 70S and 80S ribosomes<sup>2</sup>.

Resistance to G418 is conferred by the bacterial gene for aminoglycoside-3'-phosphotransferase (APH 3' II3) that can be expressed in eukaryotic cells.

## SAFETY CONSIDERATIONS

G418 is a harmful compound.

## 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.

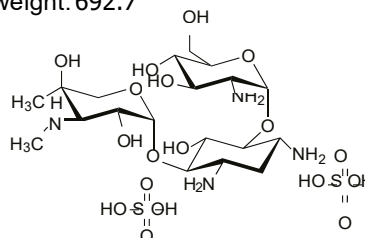
## CHEMICAL PROPERTIES

CAS number: 108321-42-2

Formula: C<sub>20</sub>H<sub>40</sub>N<sub>4</sub>O<sub>10</sub> · 2H<sub>2</sub>SO<sub>4</sub>

Molecular weight: 692.7

Structure:



## SELECTION CONDITIONS

Mammalian cells: The working concentration of G418 Sulfate for selection and maintenance of mammalian cell lines transfected with the neo gene varies with a multitude of factors including cell type. In a starting experiment we recommend to determine optimal concentrations of antibiotic required to kill your host cell line by treating the cells with several concentrations, ranging from 100 µg/ml to 1 mg/ml. After treatment, cell death occurs rapidly, allowing the selection of transfected cells with plasmids carrying the neo gene in as little as 7 days post-transfection.

## WORKING CONCENTRATIONS

G418 is normally used at a concentration of 400 µg/ml. However, the optimal concentration needs to be determined for your cells. Suggested concentrations of G418 for selection in some examples of mammalian cells are listed below:

Cell lines	Medium	G418 conc.
HeLa (Human uterine cells)	DMEM	200-400 µg/ml
HEK293(Humanembryonickidneycells)	DMEM	200-500 µg/ml
THP-1 (Human monocytes)	RPMI	250 µg/ml
B16 (Mouse melanocytes)	RPMI	400-1000 µg/ml
CHO (Chinese hamster ovarian cells)	Ham's	400-800 µg/ml

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