



## G418 (Geneticin) Antibiotic Solution

(Research Use Only, Not for Drug Use)

Cat#	Product Name	Amounts
<a href="#">G-anti</a>	G418 (Geneticin) solution in PBS, cell culture ready	1.0 ml ( 50 mg/ml)

**Storage:** Upon received, it should be stored at 4°C-20°C. Stable for 6 months.

### Product Description:

G418 sulfate (Geneticin) is an analog of neomycin sulfate, and has similar mechanism as neomycin. It is produced by *Micromonospora rhodorangea*. G418 blocks polypeptide synthesis by inhibiting the elongation step in both prokaryotic and eukaryotic cells. Resistance to G418 is conferred by the neomycin gene from Tn5 encoding an aminoglycoside 3'-phosphotransferase, APT 3' II.

It is used in cell biology as a selective agent to select transformed cells which have been engineered to carry a Neomycin resistance gene.

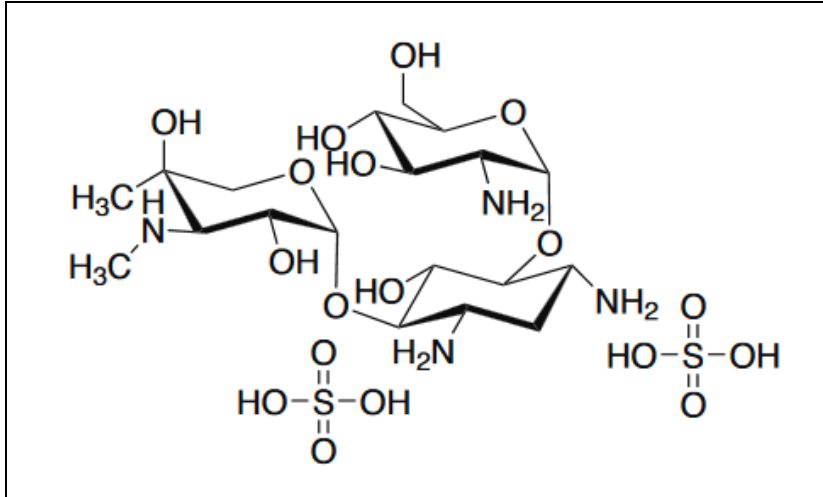
It is toxic to prokaryotic and eukaryotic cells. In general, for bacteria and algae concentrations of 5 µg/mL or less are used, for mammalian cells concentrations of approximately 500 µg/mL are used for selection.

### Specification:

- 1) 0.22ul filter sterilized solution in PBS at 50 mg/ml stock, Cell culture tested.
- 2) Compound name: G418 (Geneticin) disulfate salt
- 3) CAS number: 108321-42-2
- 4) Cell-culture tested: toxicity and potency validated mammalian cell lines.
- 5) Formula:  $C_{20}H_{40}N_4O_{10} \cdot 2H_2SO_4$
- 6) Molecular weight: 692.7 g/mol
- 7) Safety consideration: this solution is provided for stable cell selection, and for research use only, not for drug use, not for animal diagnostic or therapeutic use. Please refer to its MSDS file for handling instructions.



## 8) Structure:



### Working Concentrations:

The working concentration of antibiotic is dependent cell types and antibiotic's potency. It must be obtained from the killing curve test in your specific cell type. The optimal concentration is the minimal concentration that kill all your cells in the define time-course.

G418 (Geneticin) kills eukaryotic cells in about 2 to 3 weeks. The recommended G418 (Geneticin) working concentration ranges from 100 ug/ml to 1400 ug/ml.

The working concentration of Gentarget's G418 (Geneticin) solution were tested in some mammalian cell types against Gentarget's lentivirus products containing corresponding antibiotic.

You can use the G418 (Geneticin)'s working concentration listed below for the matched cell type.



## Working Concentration of Gentarget's Antibiotic Solution.

<b>Cell Line</b>	<b>G418 (Geneticin)</b> (final CONC in medium, ug/ml) * (CAT#: <b>G-anti</b> )
CHO	700
HeLa (Human)	500
HT1080	250
Hek293 (Human)	500
Jurkat (Human)	750
MB49 (Mouse)	1000
MCF10A cell (Human)	1000
MCF-7 (Human)	800
MDA-MB-231 (Human)	10
panc-1 (Human)	800
PC3 (Human)	1000
RKO (Human)	500
SW1990 (Human)	500
T47D cell (Human)	500
THP-1 (Human)	500
ZR-75-1 (Human)	600

\*: Note: The working concentration above is provided as reference. You may test the killing curve for your cell culture conditions using following protocol.

### Antibiotic Selection protocol:

#### Day 0:

Seed cells in complete medium at the appropriate density and incubate overnight in 24 well/plate.

**Note:** at the time of selection, cells should be 50%-75% confluent.

#### Day 1:

- Thaw G418 (Geneticin) solution at 37°C. Under biological hood (sterilized condition), mix via pipetting to make sure it is in fully clear solution, no pellet left.
- Make series dilution of G418 (Geneticin) from 100 ug/ml to 2000 ug/ml final concentration in your complemented medium.



- Remove the culture medium from the cell wells, and add 0.5 ml/per well of G418 (Geneticin) containing medium (with the series diluted concentration) at each well.
- Return cells to grow in incubator.

### **Day 10~21:**

Observe the cell death (detached or shirked) in each well. The optimal concentration is the minimal concentration that kill all cells in that well.

Then, use this optimal concentration to select your G418 (Geneticin)-resistant stable cells in target wells where a G418 (Geneticin) resistant plasmid was transfected. Remember to set up the controls without transduction where all cells should be died after the selection.

### **Safety Precaution:**

This antibiotic solution is provided for research use only, not for drug use, or clinical use. Please refer to MSDS file for handling this harmful material.