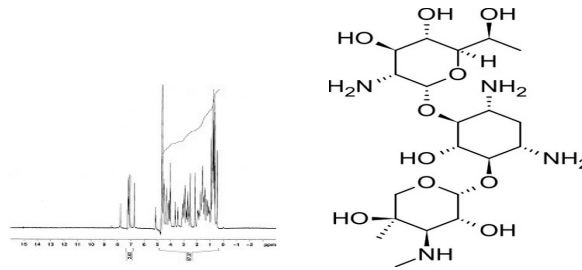


<b>Product Name:</b>	G418 Disulfate, EvoPure®
<b>Product Number:</b>	G030
<b>CAS Number:</b>	108321-42-2
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>40</sub> N <sub>4</sub> O <sub>10</sub> · xH <sub>2</sub> SO <sub>4</sub> (lot specific)
<b>Molecular Weight:</b>	496.55 g/mol (Free base)
<b>Form:</b>	Powder
<b>Solubility:</b>	Soluble
<b>Source:</b>	Biosynthetic: produced by <i>Micromonospora rhodorangea</i> .
<b>Absorbance:</b>	1mg/ml (water): 280nm <0.015 570nm <0.01 100mg/ml (water): 570nm <0.01 1.74g/25 ml (water): 280nm <0.7
<b>pH:</b>	4.6-6.0
<b>Boiling Point:</b>	1012.1 °C
<b>Flash Point:</b>	565.9 °C
<b>Storage Conditions:</b>	Ambient
<b>Description:</b>	<p>G418 disulfate, EvoPure® is a high purity (≥99.0%) form of G418 disulfate and is free of impurities present in standard grade G418. G418 disulfate, also known as G418 sulfate, is routinely used as a selection antibiotic in cell culture gene selection applications. G418 disulfate is an aminoglycoside antibiotic isolated from <i>Micromonospora rhodorangea</i> and is closely related to the gentamicins; most notably, gentamicin B1. G418 is a generic name of Geneticin®</p> <p>TOKU-E also offers <a href="#">G418 Disulfate Solution</a> and <a href="#">G418 Disulfate Powder</a> .</p>
<b>Mechanism of Action:</b>	<p>G418 disulfate, and other aminoglycosides, including <a href="#">kanamycin</a> and <a href="#">neomycin</a>, prevent protein synthesis by blocking the elongation step in prokaryotic and eukaryotic ribosomes.</p> <p><b>Mechanism of resistance:</b></p> <p>Resistance to G418 sulfate is conferred by the <i>neo</i> gene (neomycin resistant gene) from either Tn5 or Tn601 (903) transposons. Cells successfully transfected with resistance plasmids containing the <i>neo</i> resistance gene can express aminoglycoside 3'-phosphotransferase (APT 3' I or APT 3' II) which covalently modifies G418 to 3-phosphoric G418. 3-phosphoric G418 has negligible potency and has low-affinity for prokaryotic or eukaryotic ribosomes.</p>
<b>Spectrum:</b>	G418 disulfate is toxic to susceptible prokaryotic and eukaryotic cells including fungi (yeasts and molds), bacteria, mammalian and plant cells.

**Microbiology Applications** G418 disulfate can be used as a selection agent for G418 resistant bacteria or fungi after transformation.

**Technical Data:**

### HNMR Spectra



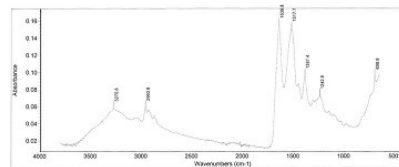
[Click to enlarge](#)

**Solvent:** D<sub>2</sub>O

**Instrument:** Mercury 300

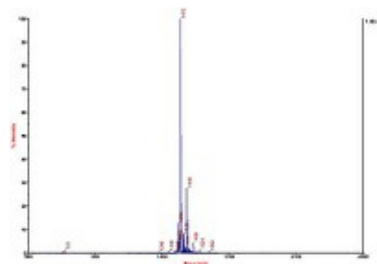
**Frequency:** 300 MHz

### FTIR Spectra



[Click to enlarge](#)

### Mass Spectra



[Click to enlarge](#)

**Polarity/Scan Type:** Positive

**Solvent:** Water

**Solution Concentration:** 10 mg/mL

**References:**

Aragão F.J.L. and Brasileiro A.C.M., Positive, negative and marker-free strategies for transgenic plant selection. *Braz. J. Plant Physiol.*, 14(1):1-10, 2002

Davis, Bernard D. "Mechanism of Bactericidal Action of Aminoglycosides." *Microbiological Reviews* 51.3 (1987): 341-50.

Dong Z.J. and McHughen, A. Improved procedure for production of transgenic flax plants using *Agrobacterium tumefaciens*. *Plant Science*, 88 (1993) 61-71  
61. Elsevier Scientific Publishers.

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