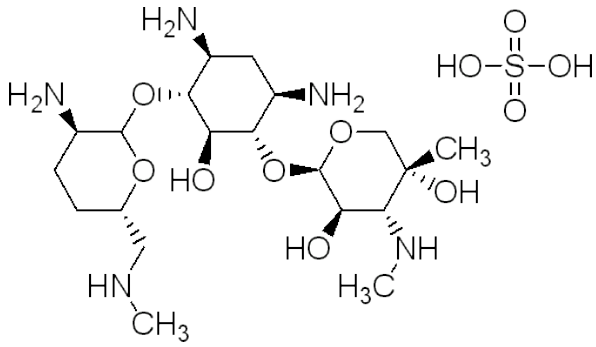
G3410
Gentamicin Sulfate
Solution 100 mg/mL

Synonyms:	Gentamycin Sulfate
CAS:	1405-41-0
Formula:	$C_{21}H_{43}N_5O_7 \bullet H_2SO_4$
Mol. Weight:	575.67



Properties

Form:	Liquid
Appearance:	Clear, Colorless Liquid
Application:	Plant Tissue Culture Antibiotic
Solubility:	Miscible in Water
Storage Temp:	2-6 °C
Typical Working Concentration:	Varies
Other Notes:	Plant Tissue Culture Tested

Application Notes

Gentamicin Sulfate is an aminoglycoside antibiotic that is effective against many Gram-negative bacteria, e.g., *Brucella, Escherichia, Enterobacter, Francisella, Yersinia, etc.,* and some strains of staphylococci. It inhibits the initiation, elongation and termination of protein synthesis by binding to the 30S subunit and sometimes the 50S subunit of the bacterial ribosome.[2] Gentamicin is suitable for plant tissue culture use as it is stable for autoclaving; however, it has been reported that gentamicin inhibits growth of tobacco, sapiglossis, romaine lettuce and artichoke at high concentration ranging from 50 to 100 µg/mL.[3, 4]

Minimum inhibitory concentration (MIC) of gentamicin has been reported for many bacteria. MIC for *Escherichia coli* is 0.05 µg/mL, *Bacteroides* spp. is greater than 128 µg/mL, and *Clostridium* spp. is 112 µg/mL.[5]

*Phyto*Technology Laboratories® also carries gentamicin sulfate solution 50 mg/mL, Product No. G3350, and gentamicin sulfate powder, Product No. G570.

Please note: It is the sole responsibility of the purchaser to determine the appropriateness of this product for the specific plants that are being cultured and applications that are being used.

References

1. *Merck* **13**, 4403
2. *Martindale: The Complete Drug Reference*, 35th ed., Paul S. Blake, Ed. (Royal Pharmaceutical Society, 2007), p. 252.
3. David A. Eichholtz, Paul M. Hasegawa and Henry A. Robitaille. 1982. Effects of gentamicin on growth of shoot initiation from cultured tobacco callus and *Salpiglossis* leaf discs. *In Vitro Cellular & Developmental Biology – Plant.* 18(1):12-14, DOI: 10.1007/BF02796380.
4. J. H. Dodds and L. W. Roberts. 1981. Some inhibitory effects of gentamicin on plant tissue cultures. *In Vitro Cellular & Developmental Biology – Plant.* 17(6):467-470, DOI: 10.1007/BF02633507.
5. Olsen, P. and L. Dragsted. "918. Gentamicin (Who Food Additives Series 41)". IPCS Inchem. http://www.inchem.org/documents/jecfa/jecmono/v041je05.htm (accessed 5 Mar 2013).

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