

Product Name: Kanamycin A Sulfate, EvoPure®

Product Number: K013

CAS Number: 25389-94-0

Molecular Formula: $C_{18}H_{36}N_4O_{11} \cdot xH_2SO_4$ (lot specific)

Molecular Weight: 484.50 g/mol (Free base)

Form: Powder

Appearance: White powder

Solubility: Freely soluble

Source: *Streptomyces Kanamyceticus*

Storage Conditions: -20 °C

Description: Kanamycin is an aminoglycoside antibiotic often used to select for plants (*Agrobacterium* mediated transformation) and bacteria which have been successfully transformed with a plasmid conferring kanamycin resistance. Kanamycin is very soluble in aqueous solution at 92.3 mg/mL.

Standard grade kanamycin is composed of a mixture of three different fractions: Kanamycin A, B, and C. TOKU-E offers five forms of kanamycin:

- Kanamycin sulfate
- Kanamycin acid sulfate (both BP grade and EP grade)
- Kanamycin A sulfate, EvoPure®
- Kanamycin B sulfate, EvoPure®

EvoPure® products are purified single antibiotic fractions, most >99% pure. High purity EvoPure® kanamycin products can be used to analyze the specific effects of individual kanamycin fractions.

Mechanism of Action: Aminoglycosides target the 30S ribosomal subunit resulting in an inability to read mRNA ultimately producing a faulty or nonexistent protein.

Spectrum: Kanamycin is a broad spectrum antibiotic, however, it is mostly used against aerobic Gram-negative bacteria.

Microbiology Applications Kanamycin is commonly used in clinical *in vitro* microbiological antimicrobial susceptibility tests (panels, discs, and MIC strips) against gram positive and gram negative microbial isolates. Medical microbiologists use AST results to recommend antibiotic treatment options for infected patients. Representative MIC values include:

- *Salmonella enteritidis* 62.5 µg/mL
- *Escherichia coli* 31.2 µg/mL
- For a complete list of kanamycin MIC values, [click here](#).

Media Supplements

Kanamycin can be used as a selective agent in several types of isolation media:

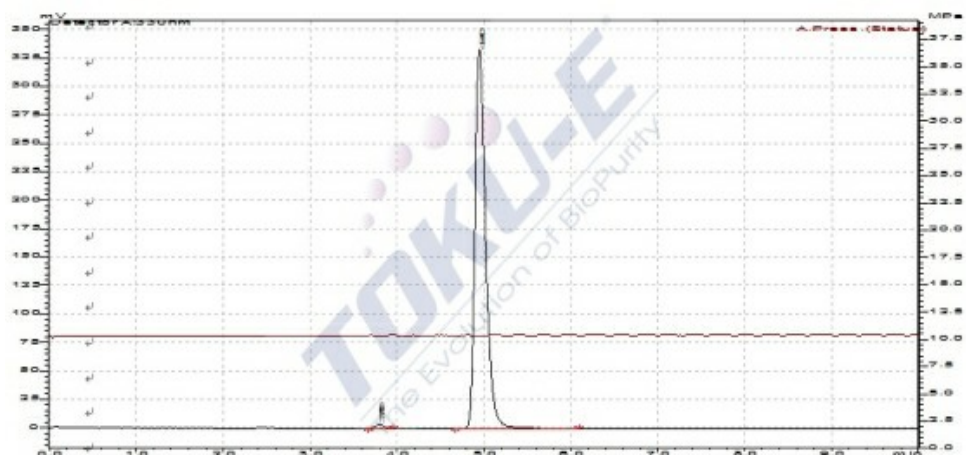
Kanamycin Aesculin Azide Agar - *Enterococci* isolation in food

Plant Biology Applications

Kanamycin is often used in *Agrobacterium* mediated transformation using the *npt II* gene as selection marker. Kaur and Bansal (2010) used kanamycin in combination with cefotaxime to control bacterial growth while transforming tomato.

Technical Data:

HPLC Chromatogram Showing Ultra High, Single Fraction Purity of Kanamycin A Sulfate, EvoPure®



References:

- Davis, Bernard D. "Mechanism of Bactericidal Action of Aminoglycosides." *Microbiological Reviews* 51.3 (1987): 341-50.
- Aragão F.J.L. and Brasileiro A.C.M., 2009 Positive, negative and marker-free strategies for transgenic plant selection. *Braz. J. Plant Physiol.*, 14(1):1-10, 2002
- Sharma M.K., Solanke A. U., Jani D., Singh Yogendra and Sharma A.K. A simple and efficient *Agrobacterium*-mediated procedure for transformation of tomato. *J. Biosci.* 34(3), September 2009, 423–433.
- Aragão F.J.L. and Brasileiro
- Kaur P., and Bansal K.C. Efficient production of transgenic tomatoes via *Agrobacterium*-mediated transformation. *Biologica plantarum* 54 (2): 344-348, 2010

