Kanamycin Acid Sulfate, BP
PRODUCT DATA SHEET
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Product Name: Kanamycin Acid Sulfate, BP
Product Number: K004
CAS Number: 64013-70-3
Molecular Formula: \( \text{C}_{18}\text{H}_{36}\text{N}_{4}\text{O}_{11} \cdot 2\text{H}_2\text{SO}_4 \)
Molecular Weight: 680.65 g/mol
Form: Powder
Appearance: Colorless solid
Solubility: Water: Freely soluble
Source: \textit{Streptomyces Kanamyceticus}
Potency (on a dry basis): 670 IU/mg
Storage Conditions: 2-8 °C

Description: Kanamycin is an aminoglycoside antibiotic often used to select for 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 acid sulfate is commonly used as a selective agent to select for resistant mammalian, fungal, or bacterial cells that contain the kanMX marker or other kanamycin resistance genes. Kanamycin acid sulfate is typically used at a concentration of 50 µg/mL.

**Pryjma, et al.** from the University of British Columbia used TOKU-E kanamycin sulfate to select for transformed kanamycin resistant *Campylobacter jejuni* cells: "FdhTU-Modulated Formate Dehydrogenase Expression and Electron Donor Availability Enhance Recovery of *Campylobacter jejuni* following Host Cell Infection"

**Media Supplements**

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

- **Kanamycin Aesculin Azide Agar** - Enterococci isolation in food
- **Perfringens Agar** - SFP and TSC selective supplements for the isolation of *Clostridium perfringens*

**Plant Biology Applications**

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

**References:**
