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Neomycin

National Cancer Institute

Source

National Cancer Institute. *Neomycin*. NCI Thesaurus. Code C683.

A broad spectrum aminoglycoside antibiotic derived from *Streptomyces fradiae* with antibacterial activity. Neomycin is an antibiotic complex consisting of 3 components: the two isomeric components B and C are the active components, and neomycin A is the minor component. Neomycin irreversibly binds to the 16S rRNA and S12 protein of the bacterial 30S ribosomal subunit. As a result, this agent interferes with the assembly of initiation complex between mRNA and the bacterial ribosome, thereby inhibiting the initiation of protein synthesis. In addition, neomycin induces misreading of the mRNA template and causes translational frameshift, thereby results in premature termination. This eventually leads to bacterial cell death.