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# Netilmicin

National Cancer Institute

## Source

National Cancer Institute. *Netilmicin*. NCI Thesaurus. Code C66236.

A semisynthetic, water soluble aminoglycoside derived from sisomicin, a naturally occurring antibiotic produced by the fermentation of *Micromonospora inyoensis*. Netilmicin 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, netilmicin induces misreading of the mRNA template and causes translational frameshift, thereby results in premature termination. This eventually leads to bacterial cell death.