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Imipenem

National Cancer Institute

Source

National Cancer Institute. *Imipenem*. NCI Thesaurus. Code C570.

A broad-spectrum, semi-synthetic beta-lactam carbapenem derived from thienamycin, produced by *Streptomyces cattleya*. Imipenem binds to and inactivates penicillin-binding proteins (PBPs) located on the inner membrane of the bacterial cell wall. PBPs are enzymes that are involved in the last stages of assembling the bacterial cell wall and in reshaping the cell wall during growth and division. This inactivation results in the weakening of the bacterial cell wall and eventually causes cell lysis. Imipenem has the greatest affinity for PBP 1A, 1B, and 2, and its lethal effect is related to binding to PBP 2 and 1B. This antibiotic is active against a wide range of gram-positive and gram-negative organisms and is stable in the presence of beta-lactamases. (NCI05)