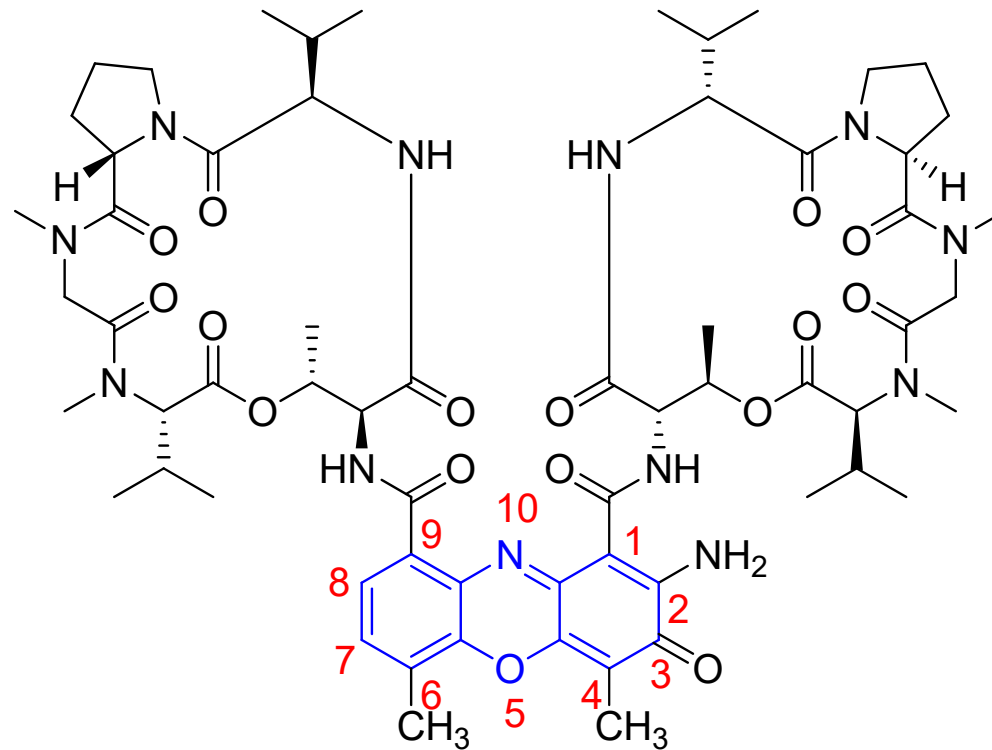


Antibiotics

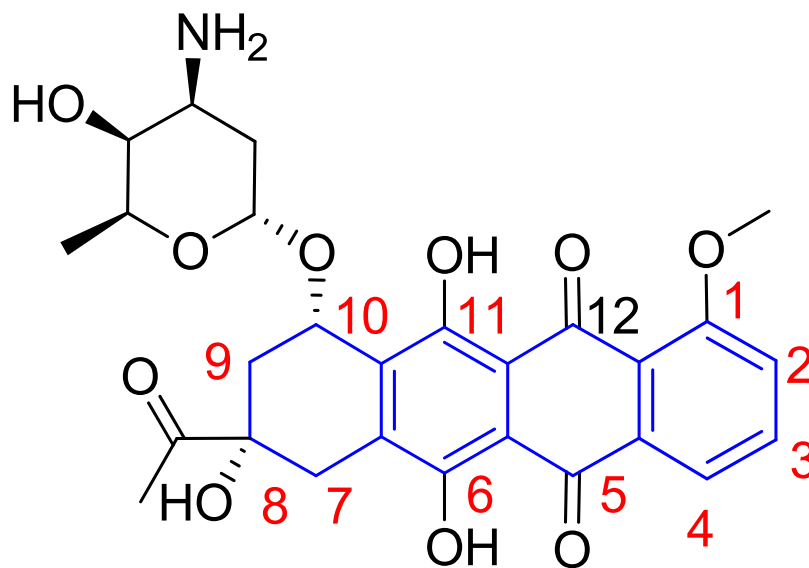
Dactinomycin



MOA: This drug binds strongly, but reversibly, to DNA, interfering with synthesis of RNA (prevention of RNA polymerase elongation) and, consequently, with protein synthesis.

Uses: For the treatment of Wilms' tumor, childhood rhabdomyosarcoma, Ewing's sarcoma and metastatic, nonseminomatous testicular cancer as part of a combination chemotherapy.

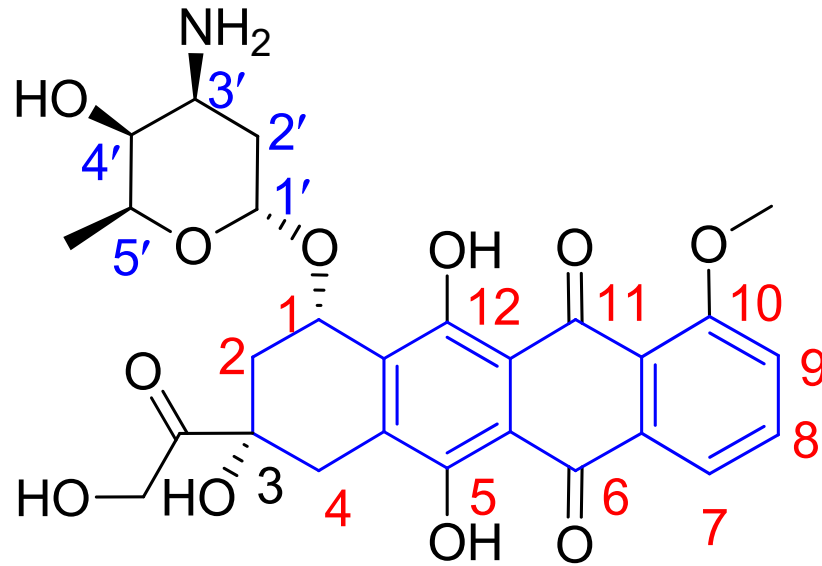
Daunorubicin



MOA: Daunorubicin forms complexes with DNA by intercalation between base pairs, and it inhibits topoisomerase II activity by stabilizing the DNA-topoisomerase II complex.

Uses: For remission induction in acute nonlymphocytic leukemia (myelogenous, monocytic, erythroid) of adults and for remission induction in acute lymphocytic leukemia of children and adults.

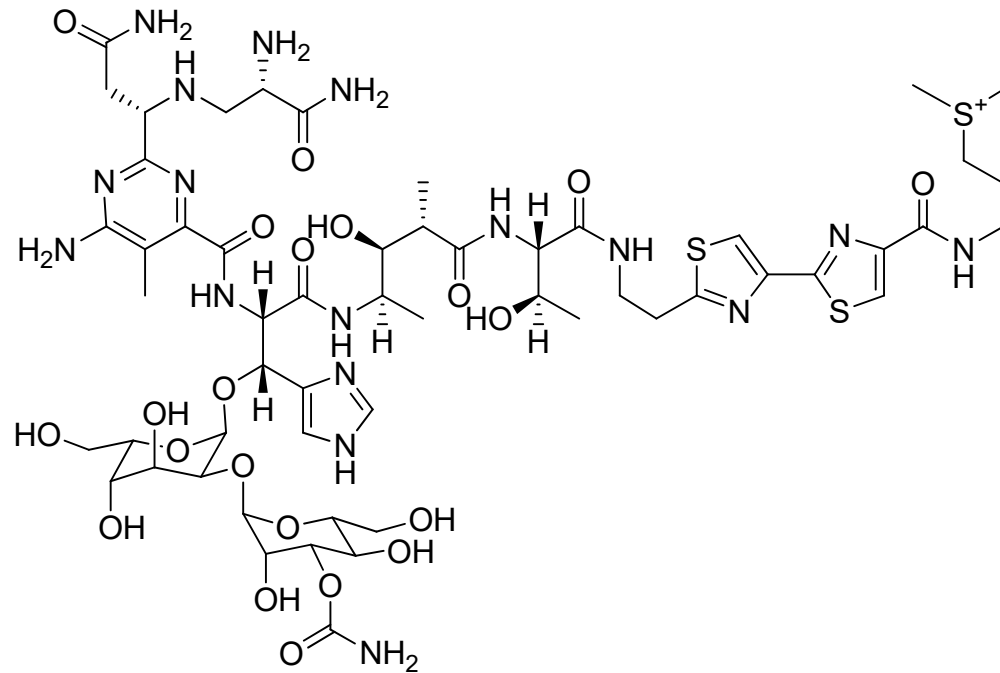
Doxorubicin



MOA: Daunorubicin forms complexes with DNA by intercalation between base pairs, and it inhibits topoisomerase II activity by stabilizing the DNA-topoisomerase II complex.

Uses: Doxorubicin is used to produce regression in disseminated neoplastic conditions like acute lymphoblastic leukemia, acute myeloblastic leukemia, Wilms' tumor, neuroblastoma, soft tissue and bone sarcomas, breast carcinoma, ovarian carcinoma, transitional cell bladder carcinoma, thyroid carcinoma, gastric carcinoma, Hodgkin's disease, malignant lymphoma and bronchogenic carcinoma.

Bleomycin



MOA: The main mode of action is the inhibition of DNA synthesis with some evidence of lesser inhibition of RNA and protein synthesis. As evident in *in vitro* studies, the DNA-cleaving actions of bleomycin is dependent on oxygen and metal ions. It is believed that bleomycin chelates metal ions (primarily iron) producing a pseudoenzyme that reacts with oxygen to produce superoxide and hydroxide free radicals that cleave DNA.

Uses: In the treatment of malignant neoplasm (trachea, bronchus, lung), squamous cell carcinoma, and lymphomas.