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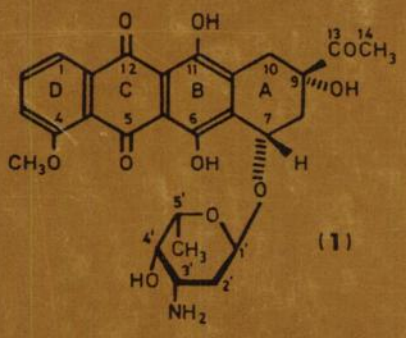

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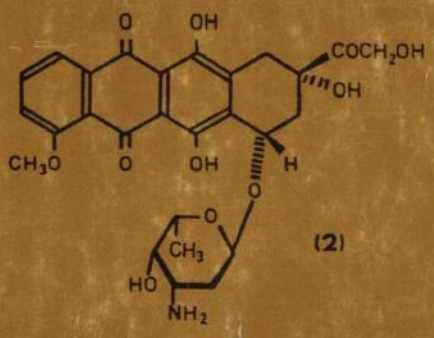

(2)

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COVER LEGEND

The antitumor anthracyclines are daunomycin (daunorubicin) and Adriamycin (doxorubicin), and their derivatives and analogs. These antibiotics are derived from microorganisms of the genus *Streptomyces*.

The isolation of antibiotics from microorganisms was heralded by penicillin and by streptomycin during the 1940's. The isolation of antitumor chemicals from microoganisms began with actinomycin D, a product of *Streptomyces* found by Waksman and his group in 1940, and found to be clinically active by the mid-1950's (S. Farber *et al.*, Adv. Cancer Res., *4:* 1–72, 1956). The search for antitumor activity among microorganisms became an important area of the Cancer Chemotherapy National Service Center (K. Endicott, J. Natl. Cancer Inst., *19:* 275–294, 1957).

Adriamycin, generically known as doxorubicin, is the most active antitumor product of *Streptomyces peucetius*. Clinically, it is active on carcinoma of the breast, urinary bladder, lung, testis, sarcomas, lymphomas, and leukemia. It is inactive on colorectal and renal carcinoma and on melanoma. Adriamycin has a high degree of toxicity, including myelosuppression, stomatitis, nausea and vomiting, alopecia, and cardiomyopathy. It is also a carcinogen.

Dr. Federico Arcamone and Dr. Aurelio Di Marco of the Farmitalia Research Laboratories of Milan, Italy, isolated and characterized Adriamycin in 1969. This was part of a systematic search for antitumor agents by an industrial company, targeting on finding the best anthracycline produced by *S. peucetius* (P. G. Sammes (ed.), Topics in Antibiotic Chemistry, Vol. 2, pp. 89–229. Chichester, U.K.: Ellis Horwood, 1978). It was soon tested clinically by the cooperative groups of the U. S. National Cancer Institute.

Pictured are Dr. Arcamone (*left*) and Dr. Di Marco (*right*), the mold of *S. peucetius* (furnished by Professor Arpad Grein of Farmitalia Carlo Erba SpA), and the Farmitalia Research Laboratories in Milan. The chemical structures of daunomycin (*1*) and its 14-hydroxy derivative are from Topics in Antibiotic Chemistry, Vol. 2, p. 242, 1978.

We are indebted to Dr. Arcamone for the information and illustrations.

M.B.S.