# Biological activity of the antitumor protein neocarzinostatin coupled to monoclonal antibody by N-succinimidyl 3-(2-pyridildithio) propionate (SPDP)

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Although a large number of cytotoxic substances is known their lack of selectivity still represents the central problem in todays cancer chemotherapy. There have been many attempts in the past to increase the selectivity of anticancer drugs.
Recent developments in the technique of producing monoclonal antibodies of high selectivity for tumor cells (1,2) and a newly developed model of the interaction of neocarzinostatin (NCS) and DNA (3,4) made the construction of antibody NCS conjugates feasible. One advantage of using NCS as cytotoxic agent in such conjugates is that no opening of a covalent bond is required as in other cases (5) to release cytotoxic action at the target. NCS acts through a non protein chromophore which is dissociated from the protein as a first step of NCS action. Once released the chromophore may react with DNA and form strand breaks or undergo inactivation. The dissociation process which determines the biological availability of active chromophore can be influenced by various means (4). Thus NCS appears to be a suitable candidate for crosslinking to monoclonal antibodies.

Experiments with heterobifunctional reagent SPDP have yield hybrid proteins of NCS-$IgG_1$. The crosslinking procedure has been followed by optical methods and isoelectric focusing. We present experimental evidence that the hybrid protein retains biological activity.

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