

RESEARCH REPORTS

1967 #1

CYTOTOXIC EFFECT OF ELASMOBRANCH PLASMA AGAINST L1210 In Vitro

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It has been reported that nurse shark serum is cytotoxic in tissue culture and prevents the growth of Rous sarcoma cells transplanted to the chicken (Segal, et al., Experimental Hematology 13:6, 1967). We have studied the effect of plasma of various elasmobranchii on the growth of leukemia L1210 cells in vitro. L1210 cells were maintained in static culture in R.P.M.I. #1630 medium (20 percent fetal calf serum). Stock bottles, after five days growth, were counted and diluted so that there were approximately 1×10^5 cells/ml, total of 5 ml in each experiment. Plasma was filtered through a Swinney filter immediately before using. A total of 0.1 ml of the plasma, dogfish Ringers or physiological saline was added to 5 ml of these cells. Cell counts were taken every 24 hours for two days using a Coulter counter.

Plasma was taken from nurse sharks (Ginglymostoma cirratum), lemon sharks (Negaprion brevirostris), both caught by handline off Bimini, Bahamas and from dogfish (Squalus acanthias) and skates (Raja erinacea) caught in Frenchmans Bay. Plasma was added to the L1210 cells so that final concentrations were 2 percent, 1 percent, and 0.2 percent. The effects of plasma from these elasmobranchii are summarized in the following table. Further studies are planned to identify the cytotoxic substance and to study its effect in vivo.

Plasma		% inhibition of growth of controls *	
		At 24 hours	At 48 hours
Nurse shark	2.0%	85	97
	1.0%	81	95
	0.2%	22	30
Lemon shark	2.0%	66	93
	1.0%	36	47
	0.2%	0	0
Dogfish	2.0%	13	48
	1.0%	8	21
	0.2%	0	11
Skate	2.0%	13	32
	1.0%	0	0

* No difference in controls containing saline or dogfish Ringers.