

Research Reports: 1958

30 minutes in the dark, then exposed to light (same as above or sunlight) for 3, 6, and 10 minutes. Eggs handled in this manner for 3 min. during the prefertilization period exhibited a non-specific delay in development after fertilization with normal sperm. However, exposures of 6 min. prevented the lifting of fertilization membranes on about 50% of the eggs, of which about half would cleave. The remaining 50% developed but slower than normal. Of those eggs exposed for 10 min. only about 3% would lift fertilization membranes, but about 10% would cleave to the 8 cell stage. Blister cytolysis would begin about 30 min. after the exposure to light. If eggs had been fertilized previous to the treatment the above effects were not noted, except for the blister cytolysis. Neither would eggs+dye for comparable periods in darkness produce deleterious effects.

In a comparison of photodynamic action with the effects of ultraviolet radiation as described by Blum et. al. (J. Gen. Physiol., 37, 1954), five common effects were noted, namely; cytolysis, cleavage delay, fixation of the membrane, inactivation of sperm, and destruction of jelly membrane.

Growth Inhibition of Mouse Sarcoma 180 in Tissue Cultures Containing Plasma from Chickens Injected with Tumor Homogenates, and the Effects on the Tumor of Previous Passage on the Chorioallantoic Membrane of the Chick*

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White Leghorn and New Hampshire Red cockerels were injected intravenously with 7 to 20 percent homogenates of mouse Sarcoma 180 which had been carried in albino mouse hosts. The birds were bled by cardiac puncture 8 days after injection to provide serum for precipitin tests and plasma for tissue culture preparations. The antisera showed low (1:2, 1:4) interfacial titers in reaction with dilute solutions of the injection antigen.

Explants of Sarcoma 180 from host mice, and similar explants of tumor which had undergone two or more passages on the chorioallantoic membrane of the chick embryo, were cultured in sterile hanging-drop plasma clots (50 percent plasma; 50 percent embryonic extract) prepared from plasmas of both immunized and normal birds. Cultures of tumor

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Research Reports: 1955

tissue taken either directly from the mouse host or from the chorioallantois of a host chick embryo showed vigorous outgrowth of long spindle-shaped fibroblasts in 10 to 12 hours in plasma of non-immunized birds. On the other hand, when plasma of immunized birds was employed in the culture medium, the growth of tumor isolates from the mouse host was either completely inhibited for an indefinite period (antibody titer, 1:4) or occurred only after a delay of 24 to 48 hours (antibody titer, 1:2, or less). The delayed outgrowth comprised cells of a shape and migratory behavior considerably different from the normal. Instead of emigrating from the explant as slender spindle cells, the cells wandered out in rounded or oval form, or assumed the shape of a blunt spindle.

In contrast, fragments of tumor which had undergone passages on the chorioallantoic membrane of the chick embryo regularly showed outgrowth of spindle-shaped fibroblasts in immune plasma. At antibody titers of 1:2, or less, slight inhibition of growth of the explant was noted. Appreciable inhibition occurred in plasma of higher antibody titer, but cellular outgrowth was not completely suppressed.

The meaning of these observations, based on a study of over 300 explants is not yet clear, and the results should be confirmed and extended. It seems not unlikely, however, that complete or partial immobilization of tumor cells from the mouse host is achieved in tissue culture by a reaction between components of the cell surface and correspondingly specific components of the homologous immune plasma. Possibly passage of the tumor on the chorioallantoic membrane of the chick results in an alteration of the surface antigens of the tumor cell so as to diminish its reactivity with components of the immune plasma, thus permitting cellular migration to occur more readily. The suggestions will be tested in future experiments.

Increased Renal Reabsorption of Water in the Toad, *Bufo marinus*, in Response to Dehydration and Toad Neurohypophysial Extract.

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Mammalian neurohypophysial extract produces a striking increase in the tubular reabsorption of osmotically free water in frogs and toads (Sawyer, unpublished). This is sometimes accompanied by a reduction in filtration rate. Marked decrease in relative free water clearance ($\text{CH}_2\text{O}/\text{CCR}$) is invariably present and accounts for most of the decrease in urine volume.

Large male toads (100-500 gm.) were imported from Bermuda. Creatinine, inulin, and osmotic clearances were followed in unanesthetized toads with polyethylene cannulae in both ureters. This eliminated errors due to bladder reabsorption and dead space.