wardly directed active transport system for both sodium and chloride is also present.

Thyroid Tissue In The Hagfish, Myxine Glutinosa

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Thyroid tissue has been studied both histologically and functionally with I^{131} in female sexually mature hagfish caught off the third Porcupine Island (Frenchman's Bay) near Bar Harbor on July 27-28 and August 8, 1959 in traps baited with herring and set in over 200 feet of water. Animals measured 44.5-72 cm. in length, with weights between 96.5 and 378 gms. In animals kept constantly in subdued light, thyroid activity in terms of the uptake of I^{131} was measured at various intervals after injection of 3 and 6.7 microcuries. Radioactivity of a number of representative body tissues (blood, integumentary, digestive and reproductive systems) was also tested.

Numerous small vesicles, similar in size in any one animal but varying in size between different animals (largest measuring around 3 mm. in diameter), and scattered in the connective tissue ventral to the pharynx, produced strong radioautographs with "no screen" X-ray film. These bodies, visible to the unaided eye, probably represent the thyroid tissue. Trimmed samples of this part of the pharyngeal floor showed higher radioactivity than any other tissue mass of comparable weight. Thyroidal I^{131}-uptake was: 3-4 hours, 0.82 percent of injected dose (average of 5 animals); 23-25 hours, 2.2 percent (average of 4 animals); 48 hours, 2.3 percent (average of 5 animals); 96 hours, 2.7 percent (average of 3 animals); 144 hours, 3.4 percent (average of 4 animals); and 192 hours, 2.9 percent (average of 3 animals). The thyroid area is being studied histologically.

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Action Of Cortisone In Increasing Metastases

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It has been found by numerous investigators that cortisone will increase the number of metastases which follow subcutaneous or intravenous injection of transplantable tumor cells into mice. The hypothesis is proposed that cortisone acts by increasing the number of tumor cells *trapped* by the capillaries; in this way more cells will have the opportunity to develop into metastases. If this hypothesis is true, then a single dose of cortisone followed by an intravenous injection of tumor cells should lead to an unexpectedly high number of lung tumors. An experiment was performed

to test this hypothesis. The transplantable S91 melanoma was used in DBA/1 mice. One set of 10 mice received 5 mgms. of Cortisone Acetate i.p. and 10 controls received the vehicle only. One day later, both series of mice were injected i.v. with 0.3 cc of tumor suspension. Then mice were sacrificed one (1) month later, and the number of lung tumors was counted. The cortisonized animals revealed an average of 33 tumors with a range of 23-56. The control mice had an average of 18 lung tumors with a range of 7-27. Thus, the evidence indicates that a single dose of cortisone is effective in increasing metastases, and the mechanism of action may involve the capillary arrest of more than the usual number of single tumor cells.

Effects Of A Steroid On Metastasis

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Previous work by us has demonstrated that a single intraperitoneal dose of 2 mgms. of 6, 9 - difluoroprednisolone caused an increased number of lung tumors in C57 mice following intravenous injection of B16 melanoma cells. The present work concerned the optimum time of administration and the optimum dose of the steroid to produce the above effect on metastasis. Series of mice received single intraperitoneal doses of 0.5, 1.0, 2, 3, or 4 mgms. of the steroid. Time intervals ranged through 2 days before, 24 hours before, 0-12 hours before, 4-8 hours after, 1 day after and 3 days after the intravenous injection of tumor cells. Preliminary results indicated that the optimum dose of steroid was 3 mgms. A larger dose killed the mice and smaller doses resulted in fewer lung tumors. The optimum time of administration of the steroid was 0-12 hours before the injection of tumor cells. Administration of the steroid 3 days after the tumor injection caused a decrease in number of metastases when compared to controls.

Lack Of Effect Of Difluoroprednisolone On The Early Development Of The Sand Dollar

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Previous work has demonstrated that one mechanism of steroid action in increasing tumor metastasis involves an increased incidence of arrest of circulating tumor cell emboli (I.Z.). Avalaible evidence indicated that capillaries of steroid treated animals trapped tumor cells more readily because of an endothelial surface change, likely in the nature of increased stickiness. Experiments were performed with Sand Dollars eggs to determine if the steroid, 6, 9, Difluoroprednisolone, would effect the surface of the infertilized or the fertilized and developing eggs. Particular attention was given to the stage of gastrulation, where cell surfaces are likely under-