meability or through some other cause, are extremely sensitive to injections of blood-carried bacterial toxins and it is this fact which creates a very special state, the *tumor vulnerability* which is responsible for the regression of malignant growths.

8160 C

Inhibiting Action of Placenta Extract on a Transplantable Malignant Epithelioma of the Rabbit.

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Previous work has been reported showing the existence in mouse placenta of a factor markedly inhibiting the growth of both transplantable and spontaneous carcinoma of the mouse.[1] Placenta from rats and rabbits were later found to be equally effective in retarding the growth of transplantable mouse carcinoma.[2] The present study is an extension of this observation to include a tumor of a different species.

The epithelioma of Brown-Pearce was selected for this work. The tumor is extremely malignant and invasive when grafted into the testicle but if inoculated into the skin it eventually regresses after a period of active growth.

The mouse placenta was prepared according to the technique described in the above-mentioned publications. Late term placenta was finely minced, dried *in vacuo* and kept in the cold room. The desiccated material was ground, extracted with 10 volumes of Ringer's solution or plain water and then centrifuged; the supernatant fluid was used as such or diluted with 10 volumes of Ringer's solution. In some cases the extract was heated to 48°C., a procedure which did not seem to modify in either direction the activity of the extract.

The tumor cells from healthy testicle growths were passed through a masher and suspended in a few cc. of Ringer's solution. This suspension was squeezed through bolting cloth and divided into 2 parts. These were mixed with an equal volume of placenta extract

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1 Murphy, Jas. B., and Sturm, E., *Science*, 1933, **77**, 631.

2 Murphy, Jas. B., and Sturm, E., *J. Exp. Med.*, 1934, **60**, 293.

and Ringer's solution respectively. The length of contact varied from 10 to 60 minutes at room temperature.

In the first group of tests the mixtures were injected intradermally into each side of the depilated flank of the same rabbit. No more than 6 mixtures were tested in each side. The results are shown in Table I.

TABLE I.

Substance injected with tumor cells	No. of injections	Tumors %
Ringer's solution	27	81.5
Undiluted placenta extract	20	25.0
Placenta extract at 1:10	14	42.8

It is evident from Table I that undiluted placenta extract has a marked effect in reducing the incidence of successful inoculations of the epithelial tumor. This action is partially lost after the extract has been diluted 10 times.

In a second group of tests the mixtures were injected into the testes instead of the skin. Ten rabbits were thus injected, 6 with the mixtures containing placental extract and 4 with the Ringer's solution mixtures. All of the animals developed tumors in both testicles and also metastases, without any significant difference between the two groups.

The above-described test was repeated with another placental extract, using 2 rabbits for the test injections and 4 for the control injections. None of the animals showed any apparent local growth, but autopsies after 30 days showed that the 4 control rabbits all had intensive metastases while the 2 test animals were entirely free from any evidence of disease. The number of animals here is too small to be of value except as a possible indication for further work.

Conclusions. Extracts of desiccated placenta contain a factor which markedly reduces the incidence of successful inoculations of an epithelial transplantable tumor in the rabbit growing in the skin, where under ordinary conditions the tumor eventually regresses. There are no indications of such strong action on the tumors growing in the testicle, in which organ the growth shows an extremely malignant character.