sugar by itself, was shown in another group of 6 rats in whom the blood sugar after 24 hours fasting was 89 mg % on the average (range: 83-92). One hour after subcutaneous injection of 1 cc of cortin, it was 89 mg % (range: 87-92) and one hour after that 92 mg % (range: 76-105).

Summary. Experiments on the fasted rat indicate that both the hyperglycemia caused by adrenalin and the hypoglycemia following insulin administration may be inhibited, though not completely suppressed, by cortin. It appears that cortin exerts a stabilizing effect on the blood sugar not unlike that obtainable by certain pituitary extracts as described by Neufeld and Collip.[8]

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Effect of Methylcholanthrene on Latent Period of Breast Tumors in Dilute Brown Mice.*

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The production of breast tumors in non-susceptible female mice of strains IF, CBA, JK, and NH by subcutaneous injection of methylcholanthrene was reported almost simultaneously in England[1] and in this country.[2] Observations in this laboratory also indicate that methylcholanthrene may affect the production of mammary carcinoma in a strain of mice that is known to develop the tumors spontaneously.

Breeding female dilute brown (Little dba) mice have a high incidence of spontaneous mammary carcinoma.[3] Subline 212, on which our experiments were performed, has a lower incidence of breast tumors than other members of the strain. Forty-two identified breeding female mice of this line have been observed for at least one year. Fourteen of them developed one or more spontaneous breast tumors when 250 to 475 days old. The average latent period was 371.0 days.

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8 Neufeld, A. H., and Collip, J. B., *Endocrinol.*, 1938, **23**, 735.

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1 Bonser, G. M., and Orr, J. W., *J. Path. and Bacteriol.*, 1939, **49**, 171.

2 Strong, L. C., and Smith, G. M., *Yale J. Biol. and Med.*, 1939, **11**, 589.

3 Murray, W. S., *Am. J. Cancer*, 1934, **20**, 573.

Most dilute brown mice died of leukosis if they were painted with methylcholanthrene solutions.[4] The carcinogen was applied to the unepilated skin twice weekly with a No. 6 camel's hair brush. The site was changed with each painting in the following order: head, left hind leg, right hind leg, left foreleg, right foreleg, sacral region, abdomen, interscapular region, anterior thorax. None of the male mice that were painted developed breast tumors. Thirteen of 65 breeding females of line 212 that were treated with methylcholanthrene had one or more mammary carcinomata. (Table I.) They appeared between the 106th and 268th day of life. The average latent period for these tumors was 181.3 days. The duration of painting varied. No breast cancer was found among 75 virgin females that were treated similarly.

The gross and microscopic appearance of the breast tumors was characteristic. The majority were typical adenocarcinomata which occasionally metastasized to the lungs. The adenoid structure was poorly retained in 2 tumors. Anaplastic cells grew in infiltrating masses and cords. Squamous metaplasia was found in some areas of one of the adenocarcinomata that followed painting with methylcholanthrene.

The number of observations does not permit any comparison of the breast tumor incidence in the 2 groups. The constant marked reduction in the latent period, however, is unquestionably significant. The reaction is analogous to that obtained with methylcholanthrene in mice subject to spontaneous lung tumors and in certain strains that develop spontaneous leukosis.

TABLE I.

Breast Tumors in 65 Breeding Female Line 212 Dilute Brown Mice Painted with Methylcholanthrene.

Mouse No.	Methylcholanthrene		Duration painting, days	Latent period breast tumor, days
	Solvent	Concentration, %		
1	Benzene	.5	65	106
2	Acetone	.25	90	145
3	Benzene	.5	91	157
4	Acetone	.25	90	164
5	Benzene	.5	57	166
6	Acetone	.25	109	187
7	Benzene	.25	144	190
8	Acetone	.25	106	191
9	Benzene	.5	84	198
10	"	.5	97	208
11	"	.5	97	208
12	Acetone	.25	154	229
13	Benzene	.5	90	268

[4] Mider, G. B., and Morton, J. J., *Am. J. Cancer*, in press.