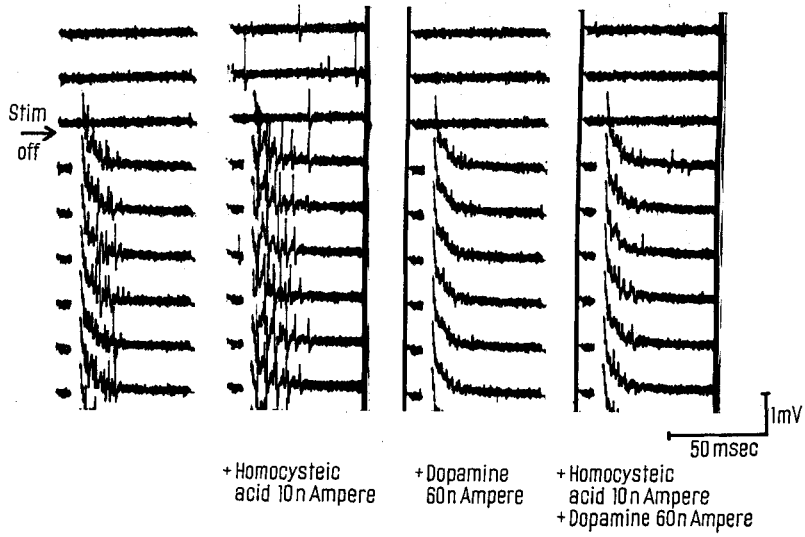

Fig. 2. Effect of dopamine on stimulus-induced neurone discharge activity in the caudate nucleus. Dopamine inhibits the short latency primary activation almost completely. Also the response, reinforced by homocysteic acid, is largely blocked by dopamine.

stimulation of the medial thalamus. During the amino acid induced activation, almost all neurones reacted to thalamic stimulation. This stimulation induced a characteristic response pattern with a primary activation consisting of 1–5 single discharges (latency about 2–20 msec) followed by a silent period of 80–350 msec and an after-discharge of variable length. DA, at a dose corresponding to an electrophoretic current of 30–60 nA, was able to inhibit not only the spontaneous and the amino acid induced discharges but also the activity evoked by thalamic stimulation in a larger number of neurones (Figure 2). The suppression began within a few seconds of switching on the electrophoretic current and it disappeared in most cells within 1–4 sec of the end of the current. Submaximal doses of DA sometimes seemed to affect the after-discharges more than the short latency discharges. It was never possible to ascertain an activation effect of DA.

The inhibitory effect of DA upon activity induced by thalamic stimulation together with the experimental studies mentioned above (which all point to a distinct role of DA in the striatum) suggests an inhibitory effect of DA on postsynaptic excitation. It was not possible for the question of whether DA has a direct inhibitory transmitter function or acts via other mechanisms to be the subject of the present study.

Zusammenfassung. Dopamin hemmt bei mikroelektrophoretischer Verabfolgung die spontane und die durch synaptische Erregung ausgelöste Entladungstätigkeit von Neuronen des Corpus Striatum des Kaninchens.

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Influence of Castration and of Testosterone on Prealbumin in Mouse Serum

In a previous publication[1], it was demonstrated that in mouse serum the prealbumin fractions depend upon the strain and the sex. 3 components of prealbumin, PA_1, PA_2 and PA_3, were separated by starch gel electrophoresis in the BALB/C+ strain. PA_1 was only detectable in adult male mice, whereas PA_2 and PA_3 appeared in a significantly lower concentration in female and immature mice.

The present paper deals with the effects of castration and of administration of male sex hormones on concentration of prealbumin in the serum. The Table shows that 14 days after castration PA_1 is no longer detectable and that PA_2 and PA_3 have decreased to the level found in female mice.

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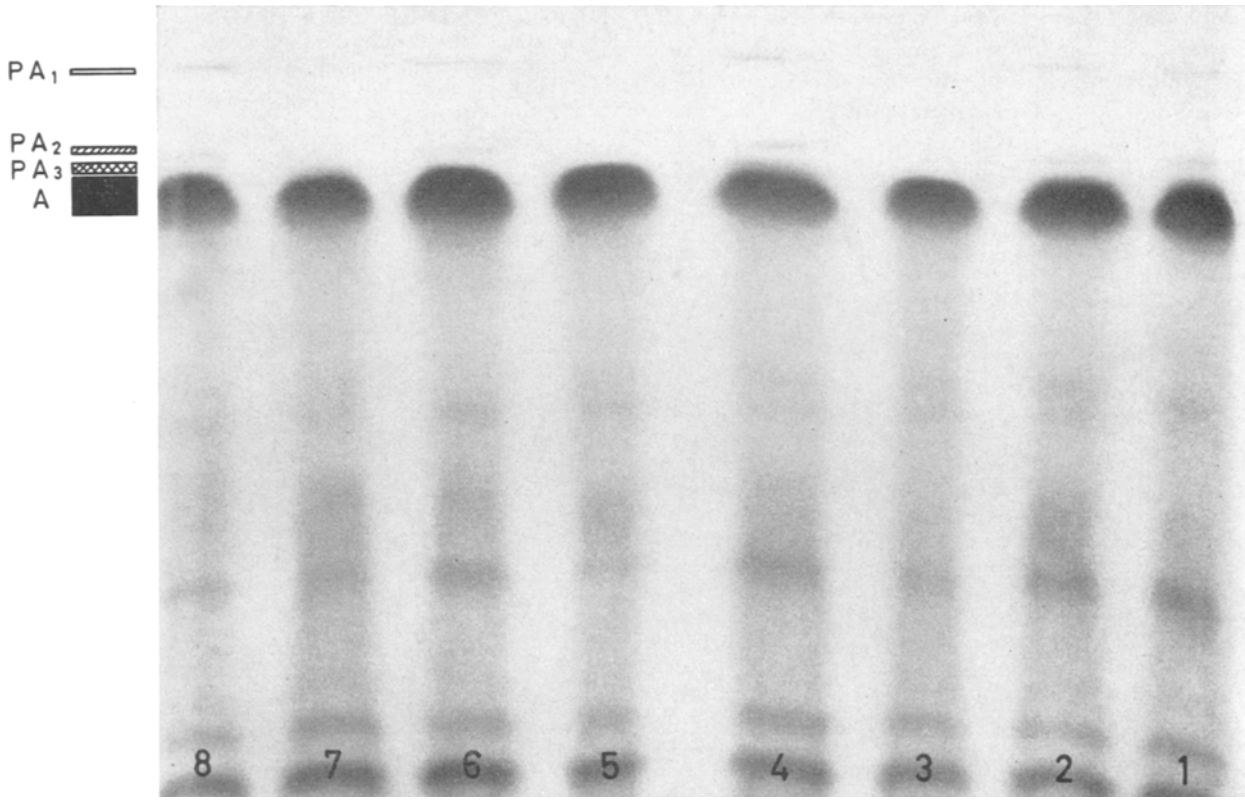

Starch gel electrophoresis (in a discontinuous buffer system of *tris*, citrate, borate/borate pH 8.5) showing the effect of testosterone on prealbumin in mouse serum. (1) Adult male; (2) adult male + testosterone; (3) castrated male; (4) castrated male + testosterone; (5) adult female; (6) adult female + testosterone; (7) castrated female; (8) castrated female + testosterone.

The mice were given one i.m. injection of 2.5 mg testosterone propionate. Prealbumin in the serum of castrated injected mice recovered 10 days after injection and showed the same electrophoretic pattern as in normal males (Figure). Such an appearance of prealbumin fractions is found also in female mice after injection of testosterone, but the effect in serum disappears more rapidly in normal females than in castrated females or males.

A specific prealbumin has also been detected in the urine of rats and mice[2-4]. RUMKE and THUNG[3] have found small quantities of this protein in the serum but these results have not been confirmed by BAO LINH et al.[5].

It would be of interest to know whether urinary prealbumin is indeed identical with one of the components found by us in the serum, and also what physiological significance these proteins have[6,7].

Effect of castration on prealbumin

Sex	No. of animals	PA_1	PA_2	PA_3
Adult male	20	100 ± 20	100 ± 9.1	100 ± 3.0
Adult female	20	Not detectable	55.8 ± 6.8	39.1 ± 2.8
Castrated male	19	Not detectable	49.2 ± 3.9	42.8 ± 2.6
Castrated female	20	Not detectable	34.2 ± 3.0	41.2 ± 3.0

The separations on starch gel were carried out as described earlier[1] and the relative concentration of the prealbumin fractions was determined by reflective densitometry after staining with amido black 10B. The values are presented in % of the mean values of adult male mice.

Résumé. On a montré, qu'après castration, la concentration des différentes fractions de la préalbumine diminue considérablement dans le serum des souris mâles adultes. 10 jours après injection de testosterone, le serum des souris castrées mâles et femelles et des femelles normales présente une image électrophorétique semblable à celle des souris mâles adultes normales.

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[7] This work was supported by 'Le Fonds de la Recherche scientifique fondamentale collective'.