High Noradrenaline Content in the vas deferens of the Cock and the Tortoise

Recently it has been shown that the vas deferens of different mammals contains high amounts of noradrenaline[1,2]. This is probably due to the very dense distribution of adrenergic nerves found in this organ[3-5]. It seemed therefore of interest to examine the catecholamine content of the tortuous vas deferens of birds and reptiles. The cock (*Gallus domesticus*) and the Greek tortoise (*Testudo graeca*) were chosen for the examination.

Methods. Adult animals were used. The cocks were of the White Leghorn strain. The animals were killed by decapitation and the vasa deferentia were removed. Their spermatozoa content was squeezed out as much as possible. After weighing the organs, the catecholamines were extracted and estimated according to EULER and LISHAJKO[6].

Results. The results are shown in the Table.

Conclusions. As shown in the Table the vas deferens of the cock and the tortoise contain high amounts of noradrenaline. The tissue content of noradrenaline is of the same magnitude as that seen in most mammals. Thus the cock vas deferens has about the same content as that of the hedgehog and the guinea-pig, while the vas deferens of the tortoise has a content similar to that of the macaque.

A more detailed discussion of the significance of the high noradrenaline content of the vas deferens is given elsewhere[2,7].

Catecholamines in the vas deferens of the cock and the tortoise

Animal	Number	Body weight	Weight of pair of vasa deferentia	Noradrenaline	Adrenaline
		kg	g	µg/g tissue	µg/g tissue
Cock	1	1.7	0.14	8.6	2.3
	2	1.9	0.15	9.3	1.2
	3	2.1	0.20	9.5	0.85
Mean		*1.9*	*0.16*	*9.1*	*1.4(5)*
Tortoise	1	0.7	0.30	15.2	–
	2	0.7	0.36	16.3	–
	3	0.9	0.42	17.8	–
Mean		*0.77*	*0.36*	*16.4*	

Zusammenfassung. Der Noradrenalingehalt des Samenleitergewebes von Hahn und Schildkröte ist gleich hoch wie bei Säugetieren.

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Study of the Mechanism of Inhibition Produced by Hexoses on Histamine Release Activity of Dextran

In a previous paper, BERALDO et al.[1] showed that dextran induces mast cell damage and histamine release from rat tissues and that both processes were inhibited by glucose, mannose and fructose. Since dextrans are polysaccharides composed solely of glucose, a competitive mechanism between those hexoses and dextran at level of the mast cell was suggested.

To test this hypothesis, peritoneal mast cell suspension was incubated in the presence of different concentrations of dextran with and without hexoses, and the results were submitted to the double-reciprocal plot, as described by LINEWEAVER and BURK.

Peritoneal mast cell suspensions were obtained by injecting 15 ml of glucose-free Tyrode solution, pH 7.5, containing 5 µg/ml heparin[2], into the peritoneal cavity of Wistar rats of either sex, weighing 150–200 g. 5 min later, the animals were anaesthetized with ether, decapitated, the abdomen opened and the fluid withdrawn. For each experiment, a pool of mast cell suspensions obtained from 3 rats was used, in which the histamine content and mast cell number were determined.

For histamine determination 0.2 ml of 0.1 *N* HCl were added to 1.0 ml mast cell suspensions, the mixture was boiled for 5 min and neutralized with 0.1 *N* NaOH. The histamine was assayed on the guinea-pig ileum, according to FELDBERG and TALESNIK[3]. The histamine values were used as base. The mast cells were counted using a Neubauer chamber, according to the principle used for leucocytes. The mast cell suspension was diluted and stained in saline containing 3% acetic acid and 0.003% toluidine blue.

The results obtained, using samples from twenty different pools, are shown in the Table.

Using suspension samples containing known amounts of histamine and mast cells, the experiments made to study the inhibition produced by hexoses on the histamine release activity of dextran were carried out as follows: to a series of 15 ml centrifuge tubes, containing 2.6 ml mast cell suspension, was added either 0.2 ml glucose-free Ty-

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