nine, tetanus toxin and metrazol, were not effective in modifying the inhibitory input to *DInhi* cells. Further work is being carried out to clarify the possible physiological role of *DInhi* neurones and the nature of the inhibitory transmitter involved in this non-cholinergic synaptic inhibition.

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PATHOLOGY

Failure to induce Atherosclerosis in 'Triton' Hyperlipæmic Guinea Pigs

It has been shown that 'Triton-*WR* 1339', a non-ionic surface-active agent, induces high hyperlipæmia in rabbits[1], rats[2], mice[3], guinea pigs[1,4] and dogs[5]. Typical atheromasic changes of the aorta, coronary and pulmonary arteries have been demonstrated in 'Triton'-treated dogs[5]. These findings are of some interest, since dogs are usually less susceptible to atherosclerosis, and the atheromasic changes have been obtained in animals fed with a normal diet.

On the basis of the foregoing results, 37 guinea pigs of both sexes have been treated with 'Triton-*WR* 1339'. All the animals were divided into three groups and fed with a commercial standard diet to which carrots and green salad were added. Ten (first group) were not treated, 18 (second group) were given subcutaneously a 20 per cent 'Triton-*WR* 1339' in saline at a dose of 400 mg/kg every fourth day, for 19 weeks; 19 (third group) were given 'Triton' as the latter ones, and furthermore received subcutaneously a single dose of 1,000 viscosimetric units of lyophilized testicular hyaluronidase diluted into 3 ml. of saline, 30 days before the end of the treatment with 'Triton'. Treatment with hyaluronidase was given to enhance a possible atherogenic effect of 'Triton', as shown in cholesterol-fed rabbits[6–9]. All the animals were killed by cardiac puncture. The serum level of total cholesterol, phospholipids, total lipids and β-lipoproteins were determined. The entire aortæ, previously fixed in 10 per cent neutral formalin, and stained with Sudan III, were grossly and independently observed by three persons. Furthermore, the aortæ and the other organs were properly processed for histological examination.

Average values and their standard deviations of blood lipids for the three groups of animals are given in Table 1.

Serum total cholesterol, phospholipids, total lipids and β-lipoproteins are much higher in the second and third group than in the first group.

The organs and aortæ of the animals of all groups were found almost completely devoid of any change.

Chromotrope subintimal ground substance was very scarce in the arterial wall of the control guinea pigs, their endothelial cells lying just directly on the internal elastic membrane.

High blood lipids have previously been demonstrated in 'Tritonized' guinea pigs[4], but at lower levels, presumably because of the shorter period of treatment; moreover, no morphological studies on 'Triton'-treated guinea pigs have been carried out. In our experiments hyperlipæmia has not been followed by any significant change of the aortic wall or even by any lipidic infiltration of the liver, spleen and kidneys. These findings agree with the chemical results obtained by Patnode *et al.* on guinea pigs[4], although they are different from those observed in 'Triton'-treated dogs[5].

It has been shown[10] that lipolithic activity of intimal arterial layer of animals less susceptible to experimental atherosclerosis (for example, guinea pigs) is higher than that observed in the same tissues of more susceptible species (for example, rabbits). This could justify the unexpected lack of any atheromasic findings into the aortæ of the guinea pigs of the present experiments, since their endothelial cells may be particularly efficient in lipidic metabolism.

Moreover, our observations of scarce chromotrope ground substance in the intimal tissues of control untreated guinea pigs could also explain the failure to induce atherosclerosis in these animals, since the ground substance could favour the deposition of lipids into the arterial wall.

Table 1. Average Values and Standard Deviations of Weight and Blood Lipids for the Animals of All the Groups

	No. of animals	Weight (g) At the beginning of treatment	Weight (g) At the end	Total cholesterol (mg/100 ml.)	Phospholipids (mg/100 ml.)	Total lipids (mg/100 ml.)	Lipoproteins (%)
First group. Control untreated guinea pigs	10	435 76	432 114	48·9 13·4	51·4 28·5	192·5 40·6	93·9 3·9
Second group. Guinea pigs treated with 'Triton-*WR*' 1339	18	537 52	522 103	604·0 200·5	1,396·1 489·9	7,634·4 3,560·1	99·2 0·82
Third group. Guinea pigs treated with 'Triton-*WR* 1339' and hyaluronidase	19	517 64	500 113	572·1 187·3	1,176·2 315·2	6,761·0 2,380·5	98·8 0·54

Comparative anatomical examination of the vascular structures of species differently susceptible to atherosclerosis might be worth while in this respect.

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