of the total radioactivity recovered, and were not enhanced when MAO was inhibited. The percentage of tyramine in CMA blood was between 17.6% and 31.8% of that found in PV blood, while the corresponding values for pHPA were 36.6% and 76.9% suggesting selective removal/metabolism of tyramine in the circulation, particularly with the larger doses. The presence of tyramine in mesenteric arterial blood (Table 1) meant that the liver, heart and lungs failed to completely remove or inactivate the amine.

When histamine (5.0 μmol/kg) was additionally instilled with tyramine, enhanced amounts of tyramine appeared in PV and CMA blood with 1.7 and 8.5 μmol/kg doses (tyramine) but not with the larger dose, suggesting that absorption and metabolism of tyramine are dependent on the relative concentrations of other amines.

The effect of non-selective MAOI instilled 90 min prior to instillation of tyramine was to enhance in a dose-dependent manner the amount of tyramine in PV and CMA blood, tranylcypromine being particularly effective (Table 1). Following clorgyline, a selective MAO A inhibitor, tyramine was absorbed in amounts comparable to those with mebanazine, 10 μmol/kg, (see Table). In contrast and an explanation for Varga & Tringer's 1967 findings the amount of absorbed tyramine following an MAO B inhibitor, (−)-deprenyl, was similar to that in control cats, although MAO activity *in vitro* (Imrie, Marley & Thomas, 1979) was inconsistent with the *in vivo* results.

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Inhibition of synaptosome ATPase by PGE_1 may be dependent on a soluble factor

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The inhibition by PGE_1 of a sodium-activated, magnesium-dependent adenosine triphosphatase (Na^+-ATPase) prepared from CNS nerve terminals (Gilbert & Wyllie, 1975) has been examined in more detail.

Experiments have shown that while inhibition of Na^+-ATPase by PGE_1 occurs in synaptosomes which have been prepared intact and subsequently ruptured in the ATPase assay medium, this was not the case when the synaptosomes were stabilized in the medium by the addition of sucrose to increase the osmolarity. (Table 1).

From these and other studies it has been found that increasing the medium osmolarity in the range 355–450 m osmol/l represents a change from a large to a small percentage of ruptured synaptosomes. The osmolarity-dependent diminution of Na^+-ATPase in-

Table 1 % inhibition of synaptosome Na^+-ATPase by PGE_1*

	Medium Osmolarity (m osmol/l)				
	355	375	400	425	450
Fresh	70.5 ± 3.0 (6)	66.7 ± 6.5 (3)	39.1 ± 8.8 (4)	8.0 ± 5.6 (3)	9.2 ± 9.1 (6)
Rethawed	71.2 ± 5.1 (3)	72.4 ± 3.1 (3)	69.8 ± 6.2 (4)		73.7 ± 5.5 (4)

* 10 μg/ml control activity 3.4 ± 0.3 (6) μmol $mgPr^{-1}$ h^{-1} corresponding to 0% inhibition.

hibition by PGE_1 in fresh synaptosomes could not be demonstrated when synaptosomes were ruptured by freezing and thawing, before transference to the assay medium. This raised the possibility that access to the enzyme was a limiting factor. However, when synaptosomal membranes were prepared free of cytoplasm, no inhibition of membrane Na^+-ATPase was observed under conditions which permitted maximum accessibility to the enzyme. Addition of the cytoplasm back to the membranes largely restored the inhibitory effect. This suggests that PGE_1 action depends upon the presence of a soluble factor in the synaptosome cytoplasm. Recent experiments (Gilbert & Sawas, unpublished) suggest that the actions of noradrenaline on synaptosome ATPases also depend on cytoplasmic factors.

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Hypocholesterolemic effects of vitamin C, clofibrate and diosgenin in male guinea-pigs

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Scorbutogenic diets containing 0.3 g% cholesterol were administered to 6 groups of 6 male guinea-pigs for 24 days. Bodyweight and food intakes were measured daily (Odumosu & Wilson, 1973; Ginter & Zioch, 1972). For 14 days they maintained a constant food-intake and gained weight, thereafter weight loss and reduced food-intake occurred. On day 24, plasma and hepatic ascorbic acid concentrations were reduced to 20%, and cholesterol values were 200% of their original levels (Odumosu & Wilson, 1978).

The remaining groups of 5 guinea-pigs received the scorbutogenic diet without cholesterol, with either diosgenin 1000 mg/100 g diet (DSc), or 200 mg clofibrate/kg weight by stomach tube (CSc), or supplementary vitamin C i.p. 30 mg/kg (AASc), or vitamin C with clofibrate (CAASc), or diosgenin with vitamin C (DAASc), or saline i.p. alone (Sc) (Table 1). On day 34 body weight and food intake had increased significantly in groups AASc, CAASc, DAASc; they became further reduced in the other groups (Sc, CSc, DSc). Plasma and hepatic ascorbic acid levels had fallen further in the Sc group, but the fall was arrested in the CSc and DSc groups. Ascorbic acid rose maximally in the group receiving the vitamin C supplement (AASc) and rose least in the supplemented diosgenin group (DAASc). Plasma and hepatic cholesterol did not fall in the Sc group. Cholesterol fell in the CSc and DSc groups, the hepatic fall being greater

Table 1 The effects of clofibrate and diosgenin on plasma and hepatic ascorbic acid and cholesterol levels in hypercholesterolemic scorbutic guinea-pigs in the presence or absence of supplementary Vitamin C. Control values (Day 24) before drug administration (mg%, mean ± s.d.): Ascorbic acid, plasma 0.15 ± 0.02, hepatic 2.50 ± 0.50; Cholesterol, plasma 420 ± 21, hepatic 760 ± 48. P: between control and treatment values, and between individual treatment values on day 34

	Ascorbic Acid				*Cholesterol*			
Groups	*Plasma*	*P*	*Hepatic*	*P*	*Plasma*	*P*	*Hepatic*	*P*
CSc	0.21 ± 0.02	N.S.	1.90 ± 0.16	N.S.	338 ± 36	<0.05	645 ± 38	<0.05
	N.S.		N.S.		N.S.		<0.02	
DSc	0.28 ± 0.04	N.S.	1.00 ± 0.11	N.S.	312 ± 34	<0.05	382 ± 42	<0.02
	<0.05		N.S.		<0.05		<0.02	
Sc	0.12 ± 0.03	N.S.	1.05 ± 0.11	N.S.	442 ± 21	N.S.	780 ± 30	N.S.
	<0.02		<0.02		<0.01		<0.05	
AASc	1.40 ± 0.10	<0.02	12.80 ± 0.80	<0.05	142 ± 18	<0.01	472 ± 46	<0.05
	<0.05		N.S.		N.S.		<0.05	
CAASc	0.90 ± 0.08	<0.05	10.00 ± 1.40	<0.05	120 ± 11	<0.01	340 ± 56	<0.02
	N.S.		<0.05		<0.05		N.S.	
DAASc	0.70 ± 0.03	<0.05	5.50 ± 1.20	<0.05	312 ± 32	<0.05	320 ± 42	<0.02