This method makes possible the direct determination of amine production in the presence of amino-acids and therefore possesses advantages over previously reported methods^{15,16}. A further advantage of the method is that it is possible to estimate methylamine and *N*-methyl ethanolamine simultaneously in mixtures of the two by determining the optical densities at the respective absorption maxima and substituting in the following equations:

$$\text{Methylamine} = \frac{(0.080 \times E^{377.5}) - (0.112 \times E^{352.5})}{-0.00186} \mu\text{g}$$

$$\text{N-methyl ethanolamine} = \frac{(0.268 \times E^{377.5}) - (0.142 \times E^{352.5})}{-0.00186} \mu\text{g}$$

Mixtures of different known concentrations of the two amines were examined by this method. Results from ten such mixtures gave only 2.5 per cent error for each of the two amines.

The method has been particularly useful in studies on the ion-exchange chromatography of plant amines, since it was found that, using the method of Blau¹⁷ with columns of 'Amberlite CG-50' and 'Permutit ZK-226', the peaks of methylamine and *N*-methyl ethanolamine showed close proximity under certain conditions. Furthermore, the method is being used in studies of the metabolism of these two compounds in *Mercurialis perennis* L., *Nicotiana tabacum* L., and *Elodea canadensis* Michx.

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Enhancement of the Effect of Prednisolone by 2-Methyl-1,4-naphthoquinone

In conjunction with the microbiological transformation of steroids, small ring compounds were found to inhibit the breakdown of sterane structure. Since this phenomenon was encountered in the case of both fungi and bacteria¹⁻⁴, the idea presented itself that this biochemical observation might be of more general validity. We therefore undertook to investigate the influence of 2-methyl-1,4-naphthoquinone (MNQ), found to be the most efficient by ourselves, on the effect of prednisolone in various pharmacological tests.

In these studies we used three methods: the thymus involution and liver glycogen tests, and the antiphlogistic action, generally used for the pharmacological evaluation of glucocorticoids, with the modifications devised by ourselves⁵.

The experiments consisted of administering prednisolone itself in two doses in a ratio of 1 : 3, and then studying how far the effect of the smaller dose of prednisolone could be enhanced by the aid of simultaneously applied MNQ. Untreated animals and groups given only MNQ were used as controls. In all the tests, both prednisolone and MNQ were injected subcutaneously; in case of concurrent use, from separate syringes at different sites.

The results of tests for thymus atrophy are given in Table 1. Thymus atrophy was more marked with animals given small doses of prednisolone (P) and MNQ than with those given three-fold amounts of prednisolone alone; hence the effect was intensified to more than three-fold. It may furthermore be seen that in itself MNQ was completely without effect.

Table 1			
No.	No. of animals	Treatment	Thymus (mg %)
1	12	0.9 mg P	134
2	12	0.3 mg P	179
3	12	0.3 mg P + 0.06 mg MNQ	116
4	12	0.06 mg MNQ	295
5	12	control	292
$P_{2-3} < 0.001$ $P_{1-3} > 0.05$			

Table 2			
No.	No. of animals	Treatment	Liver glycogen (mg %)
1	7	0.45 mg P	1,680
2	7	0.15 mg P	259
3	7	0.15 mg P + 0.0075 mg MNQ	198
4	7	0.15 mg P + 0.075 mg MNQ	1,840
$P_{2-4} < 0.01$ $P_{1-4} > 0.2$			

Table 3			
No.	No. of animals	Treatment	Paw volume (mm ³)
1	40	2.4 mg P	305
2	40	0.8 mg P	350
3	40	0.8 mg P + 0.2 mg MNQ	240
4	40	0.2 mg MNQ	422
5	40	control	431
$P_{1-3} < 0.01$ $P_{2-3} < 0.001$			

The liver glycogen tests were undertaken with two doses of MNQ in an attempt to enhance the effect of prednisolone. As shown in Table 2, the smaller dose was completely ineffective, whereas the larger dose of MNQ, similarly to the results of the thymus tests, increased the effect of the smaller dose of prednisolone to such an extent as to cause the formation of larger deposits of liver glycogen than did three-fold doses of prednisolone alone.

Table 3 presents the results obtained by tests for antiphlogistic action. As demonstrated by our findings, MNQ alone practically failed to exert any influence on oedema due to dextran. On the other hand, when added to prednisolone, MNQ strongly intensified the effect of the latter; administered simultaneously with MNQ, 0.8 mg/kg of prednisolone inhibited the development of oedema induced by dextran much more efficiently than did 2.4 mg of prednisolone in itself.

According to our results, the efficiency of prednisolone is significantly intensified by concurrently administered MNQ. Attempts to elucidate the mechanism responsible for this action are now being made.

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