induced oedema measured at 1 h by 118% ($P < 0.01$) but had no effect on oedema measured at 4 hours. Dexamethasone (1 and 5 mg/kg) inhibited the 1 h response by 44% ($P < 0.01$) and 59% ($P < 0.01$) respectively, but in the presence of arachidonic acid inhibition was prevented and oedema was enhanced by 60% ($P < 0.01$) and 92% ($P < 0.01$) respectively. These results are in general agreement with those of Lewis, Nelson & Sugrue (1975).

A different profile was seen when oedema was measured after 4 hours. Dexamethasone (1 and 5 mg/kg) inhibited oedema by 62% ($P < 0.01$) and 88% ($P < 0.01$) respectively. Arachidonic acid (1 mg/kg) had no effect on inhibition by dexamethasone (1 mg/kg) but reduced inhibition by dexamethasone (5 mg/kg) to 24% ($P < 0.01$).

Arachidonic acid (1 mg/kg) did not affect the accumulation of cells in the carboxymethylcellulose pouch at any time up to 5 h after injection of carboxymethylcellulose. Dexamethasone (0.25 mg/kg) inhibited the 5 h response by 78% ($2.21 \pm 0.22 \times 10^7$; control $9.67 \pm 0.96 \times 10^7$, $P < 0.01$) and this was not altered by arachidonic acid ($1.3 \pm 0.16 \times 10^7$; control $7.81 \pm 1.15 \times 10^7$, $P < 0.01$). Similar results were obtained with dexamethasone (5 mg/kg).

The results suggest that while the effects of dexamethasone on oedema may be ascribed to inhibition of arachidonic acid generation, cell emigration and its inhibition by dexamethasone are independent of arachidonic acid.

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U-46619, a selective thromboxane A_2-like agonist?

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Instability and the necessity for biosynthetic preparation complicate the study of the biological actions of prostaglandin endoperoxides (PGG_2 and PGH_2) and thromboxane A_2 (TXA_2). Stable analogues of PGH_2 have been synthesised; these resemble the natural compound in contracting rabbit aorta and aggregating human platelets (Malmsten, 1976). However, TXA_2 also has these actions (Hamberg, Svensson & Samuelson, 1975), and in view of these similarities we have carried out a comparison of the effects of PGH_2, TXA_2 and the stable PGH_2 analogue, U-46619 (Bundy, 1975), on a range of isolated smooth muscle preparations.

Guinea-pig ileum (Horton & Main, 1963), guinea-pig lung strip (Lulich, Mitchell & Sparrow, 1976), guinea-pig fundus (Vane, 1957), rabbit aortic strip (Furchgott & Bhadrakom, 1953), dog and cat iris sphincter muscle (van Alphen & Angel, 1975) and dog saphenous vein (Humphrey, 1978) were suspended for cascade superfusion (Vane, 1964). Preparations were superfused at 10 ml/min with oxygenated modified Krebs solution (Apperley, Humphrey & Levy, 1976) at 37°C containing indomethacin (2.8×10^{-6} mol/l), phenoxybenzamine (7×10^{-7} mol/l) and atropine (4×10^7 mol/l). PGH_2 was prepared by the method of Gorman, Sun, Miller & Johnson (1977). TXA_2 was prepared by incubating PGH_2 with indomethacin-treated sheep platelet microsomes at 0°C for 15–120 seconds. PGH_2 (15–1500 ng) contracted all preparations, with a threshold dose of <15 ng on dog iris and 15–50 ng on the other preparations. Incubation of PGH_2 with platelet microsomes potentiated activity on rabbit aorta, dog saphenous vein and guinea-pig lung strip; although threshold doses on these preparations were unchanged, dose-effect curves became steeper. On the other preparations, incubation with platelet microsomes reduced the potency of PGH_2; threshold doses increased 3–30 times and dose-effect curves became shallower. These changes in biological activity were presumed to be due to TXA_2 formation, since they could be prevented by treatment of the platelet microsomes with imidazole (300 μg/ml), a selective thromboxane synthetase inhibitor (Moncada, Bunting, Mullane, Thorogood, Vane, Raz & Needleman, 1977). U-46619 (10 ng–

1 μg) contracted rabbit aorta, dog saphenous vein and guinea-pig lung strip, but had little or no effect on the other preparations.

PGH_2 was a potent agonist on all the preparations examined; these effects may have been mediated either directly or indirectly by conversion to other biologically active prostanoids (Bunting, Gryglewski, Moncada & Vane, 1976). In contrast TXA_2 and U-46619 were potent agonists on rabbit aorta, dog saphenous vein and guinea-pig lung only. U-46619 therefore appears to be a selective TXA_2-like agonist; if this is so it could prove to be valuable in the study of the biological actions of TXA_2 since, unlike TXA_2, U-46619 is stable.

PGH_2 and sheep platelet microsomes were supplied by Dr. P.J. McCabe of the Biochemistry Department, Glaxo Group Research, Ware Division.

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The effect of GABA on the conductance of Ascarid muscle

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Del Castillo, De Mello & Morales (1964a) have described the hyperpolarizing effect of γ-aminobutyric acid (GABA) on the membrane potential of *Ascaris* muscle. The aim of the present experiments was to describe the effect of GABA on the conductance of *Ascaris* muscle.

Recordings were made from the bag region of the *Ascaris* muscle cells using two potassium-acetate filled microelectrodes for separate current injection and voltage recording. The preparation was perfused constantly with cool (22°C) Ringer (Del Castillo *et al.*, 1964b) to abolish spontaneous depolarizations of the pacemaker and permit the recording of stable resting potentials. The effect on the input conductance was measured from the slope of the current voltage plots observed in the different concentrations of GABA.

The resting membrane potential recorded in the bag region was 31 ± 1 mV, mean ± s.e. mean ($n = 17$). The resting conductance was 2.4 ± 0.2 M Ω^{-1}, mean ± s.e. mean ($n = 12$). The application of GABA in concentrations greater than 3 μM was followed by a hyperpolarizing potential and an increase in input conductance. These effects were reversible and dose-dependant. Conductance log dose-response relationships were obtained from 6 preparations. The dose-response relationships were described by a form of the Hill equation (1), where Δg is the conductance