experience in which CBD runs with one of the other two main components. On Chromagram sheets, CBD runs with THC in Parker's solvent I (n-hexane–1,4-dioxan, 9:1), and this can be clearly illustrated using this system as the second solvent in 2-dimensional chromatography, with xylene as first solvent.

Chromagram sheets may not be the only material available giving such good resolution, but their practical convenience of use for small samples and subsequent ease of storage, have proved overriding considerations against other systems examined.

I wish to thank Dr. A. Scaplehorn of the Home Office Central Research Establishment, Aldermaston, for the gift of authentic CBD, CBN, and Δ^9-THC.

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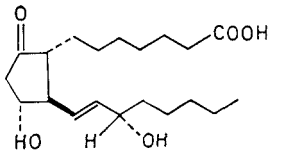
Inhibition of gastric acid secretion in the rat by synthetic prostaglandins

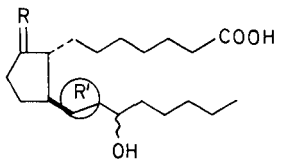
The prostaglandins (PGs) are a group of naturally occurring, long-chain, unsaturated oxygenated fatty acids with potent pharmacological activities (Bergström, Carlson & Weeks, 1968). I have examined the effects of four synthetic PGs (AY–20,524, AY–16,809, AY–21,669, AY–21,670) on gastric acid secretion in the rat.

Basal gastric acid secretory activity was measured (Shay, Sun & Gruenstein, 1954) in Charles River female albino rats (Canadian Breeding Laboratories; 150–170 g) caged individually and from which food had been withheld 48 h before pyloric ligation and drug administration. After the first 24 h of food deprivation the animals were given access to 8% sucrose in 0·2% sodium chloride for 8 h. Water was permitted *ad libitum* except during the 8 h access to sucrose. Four h after pyloric ligation the animals were killed with ether and the amount of acid in the stomach determined (6–9 animals for each treatment) by titration against 0·1N NaOH in a direct reading pH meter to pH 7·0.

The PGs were dissolved as follows: for each mg, 0·1 ml 95% ethanol was added



PGE$_1$



	R	R′		R	R′
AY-20,524	O	—CH=CH—	AY-21,669	H, OH	—CH_2—CH_2—
AY-16,809	H, OH	—CH=CH—	AY-21,670	OH, H	—CH_2—CH_2—

Table 1. *Inhibition of gastric acid secretion in the rat by synthetic prostaglandins*

Compound	Dose mg/kg, s.c.	Gastric acid secretion m-equiv/4 h ± s.e. Exp 1	Exp 2	Exp 3	Exp 4	% of control
None		0·59 ± 0·05	0·52 ± 0·04	0·47 ± 0·05	0·47 ± 0·05	
PGE_1	0·8	0·09 ± 0·02 $P < 0·001$	0·18 ± 0·04 $P < 0·001$			15, 35
	0·4		0·27 ± 0·03 $P < 0·001$			52
AY–20,524	8·0	0·16 ± 0·02 $P < 0·001$				28
	4·0			0·24 ± 0·03 $P < 0·001$		51
	2·0			0·45 ± 0·05 $P < 0·9$		95
AY–16,809	32			0·31 ± 0·03 $P < 0·01$	0·26 ± 0·03 $P < 0·01$	65, 57
	16			0·49 ± 0·05 $P < 0·9$		104
AY–21,669	32				0·31 ± 0·03 $P < 0·05$	67
AY–21,670	32				0·30 ± 0·03 $P < 0·02$	63
	16				0·53 ± 0·05 $P < 0·5$	114

(to a maximum of 1·4 ml which was sufficient to dissolve the greatest amounts of compounds) and solution achieved; this was followed by 0·18 mg Na_2CO_3 and water to the desired volume. The control animals were injected with an aliquot of this vehicle at the appropriate times. The PGs were administered subcutaneously (in 0·2 ml), half the amount stated in Table 1 being injected immediately after pyloric ligation and the other half 2 h later. Student's *t*-test was used to evaluate results.

PGE_1 inhibited gastric acid secretion (Table 1) and the level of inhibitory activity was similar to that obtained by others (Robert, Nezamis & Phillips, 1968). The related synthetic PGE analogue, AY–20,524, also inhibited the gastric acid secretion exhibiting an activity about one-tenth that of PGE_1. The synthetic PGF analogues, AY–16,809, AY–21,669 and AY–21,670, were about one-eighth as active as AY–20,524.

The synthetic PGE was a more potent antisecretory agent than the corresponding synthetic PGF (AY–20,524 *vs* AY–16,809). In a different type of assay, a natural PGE inhibited gastric acid secretion at a level at which the corresponding PGF was not effective (Robert, Nezamis & Phillips, 1967).

PGE_1 is optically pure whereas the synthetic PGs are all racemates with 4 possible optical isomers and thus it is possible that the appropriate synthetic PGs are even more potent than the racemates.

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