Videotape recording of socioactography in rats

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Socioactography (Tikal & Benesova, 1972) combines measurement of motor activity and elementary social interactions (in terms of physical contacts) of a group of five rats. The behaviour of each rat in the group is descriptively categorized at 30 s intervals as either (1) active rat in contact, (2) active rat in isolation, (3) immobile rat in contact, or (4) immobile rat in isolation.

Such forms of behaviour are greatly influenced by prior social experience of the rat and by pretreatment with psychotropic drugs. The effects of both are conveniently observed when rats are confined in a square activity arena (Schiorring & Randrup, 1971); because of the rapidity with which rats make social contacts it is necessary to make videotape recordings of their activity in the arena. Subsequent replay enables accurate quantification to be made.

Previous isolation of the rats for a period of two weeks gives rise to increased active contact and increased immobile contact, while rats which have previously been group-housed show increased active isolation when tested for 30 min daily over eight consecutive days.

Behavioural testing commenced on the third day of drug administration (1 mEq/day i.p. for 10 days). In previously group-housed rats, rubidium chloride increased immobile contact while lithium chloride depressed it. At the same dose, rubidium chloride decreased active isolation while lithium chloride increased it. In isolated rats, neither compound had significant effects at this dose.

References

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A versatile laboratory alarm/timer

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A versatile timer/alarm unit has been developed for a variety of uses in the laboratory and lecture theatre utilizing a commercially available clock module (type MA1002H–National Semiconductors) interfaced with complimentary metal oxide semiconductor (CMOS) logic subunits. A schematic diagram is shown in Figure 1. A timed output from the clock module drives both the alarm circuitry and, if required, up to three auxillary timer/alarm subunits of independently variable duration. Pilot lights are latched on after each alarm call to indicate which alarm periods have been registered.

Each auxillary timing module utilizes the high input impedance of the CMOS devices to monitor voltage changes across a resistance/capacitance network without causing undue loading. At a preset voltage a Schmitt trigger configuration drives both the alarm circuit and consecutive timing modules. The timers may be simultaneously reset by a hand held push button without affecting the initial alarm settings.

The alarm circuit uses a low voltage piezoelectric sounding device which may either sound continuously or for a user defined period. Provision is made to isolate the sounder allowing only a visual indication of the alarm state. Each alarm call is also able to operate a switching mechanism which may be used to drive external circuitry or apparatus.

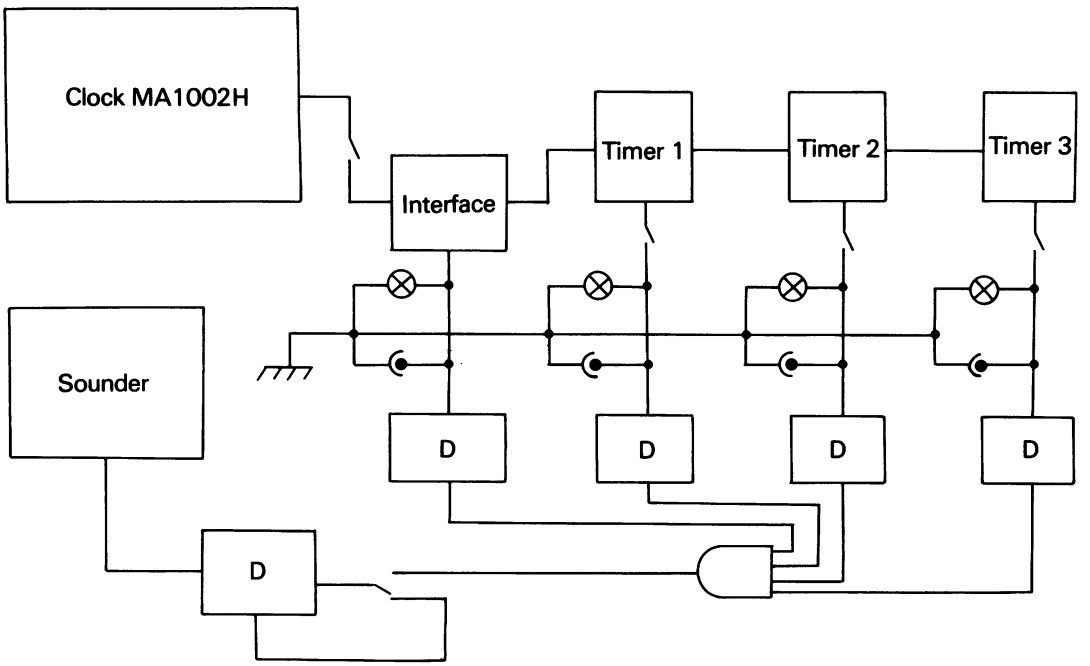

Figure 1 Schematic diagram of the alarm/timer. D is a disenabling gate for the alarm circuit.

Production of prostaglandins by porcine endothelial cells in culture

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Cultured endothelial cells were prepared from porcine aorta by 30 min digestion with 0.2% collagenase (De Bono, 1974). Cells were incubated at 37°C in 24–72, 1 ml, chambers containing Waymouth medium, 17.5 mM HEPES buffer, and 17.5% inactivated foetal calf serum. The medium was changed at 3 days. At 6–8 days, when the cells were confluent monolayers (2 cm^2, 8×10^4 cells/chamber), the supernatants were pooled, extracted with diethyl ether at pH 3–4 and assayed for prostaglandins (PGs). The supernatants were replaced with serum-free Eagles MEM medium with 17.5 mM HEPES buffer to which test substances were added, and the chambers returned to the incubator for one hour. These supernatants were extracted and assayed individually.

Pooled 3–5 day supernatants from nine different cell culture batches were assayed by bioassay and radioimmunoassay (RIA) using antisera to PGE_2 (cross reactions: $PGE_1 = 30\%$, $PGF_2\alpha = 1.4\%$, 6-oxo-$PGF_1\alpha = 0.03\%$) and $PGF_2\alpha$ (cross reactions: $PGF_1\alpha = 17.5\%$, $PGE_2 = 0.02\%$). Prostaglandin production varied between cell culture batches. Results were: PGE_2 (RIA) $= 68 \pm 19$ ng/ml, $n = 9$, range $= 27–189$; PGE_2 (rat stomach strip) $= 74 \pm 28$ ng/ml, $n = 6$, range $= 32–210$; $PGF_2\alpha$ (RIA) $= 38 \pm 7$ ng/ml, $n = 3$, range $= 27–52$.

Prostaglandins of the 'E' and 'F' types were separated by thin layer chromatography in ethyl acetate:formic acid (80:1). The immunoreactive materials co-chromatographed with authentic standards. The prostaglandins were further characterized by arachidonate-induced human platelet