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Diploma in Pharmacy 2nd Year

Pharmacology

Experiment

To study the commonly used instruments in experimental pharmacology

Aim:

To study the commonly used instruments in experimental pharmacology

Reference :

‘ Dr. P.Mudagal Manjunatha , “Practical Manual of Pharmacology”
Published by Nirali Prakashan, Page no 19 – 22

Theory :

Some common instruments used in experimental pharmacology are:

1. **Organ Bath:** It is the tissue bath used to put the animal tissue for studying the drug actions. It was first designed by Rudolph Magnus in 1904. The components of organ bath are:
 - i. An outer jacket of steel or glass or Perspex.
 - ii. The inner organ or tissue bath made up of glass with a capacity of 10-50 ml.
 - iii. Thermostatically controlled heating rod.
 - iv. Stirrer to maintain uniform temperature of the water in the outer jacket.
 - v. Oxygen or delivery glass tube which also serves as tissue holder.
 - vi. Glass coil, with one end connected having the physiological salt solution.



2. **RotaRod Apparatus:** It is used to study the muscle relaxant property of diazepam in mice. The loss of muscle grip is an indicator of muscle relaxation. This effect can be studied in animals using an inclined plane or rotating rods, r



3. **Actophotometer:** It is used to study CNS depressant property of chlorpromazine on the locomotor activity of mice. CNS depressants (alcohol) reduce motor activity, while stimulants (caffeine and amphetamines) increase motor activity. The actophotometer operates on photoelectric cell, connected in circuit with counter.



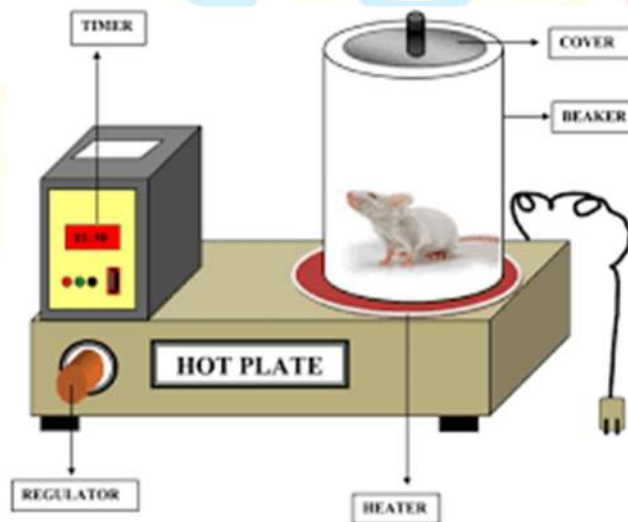
4. **Electro-convulsimeter:** It is used to study the anticonvulsant activity of phenytoin against electro-convulsimeter induced in rat. The electric shock is applied through corneal electrodes that produces 5 phases. ie., tonic flexion, tonic extensor. clonic convulsion, stupor, and recovery/death.



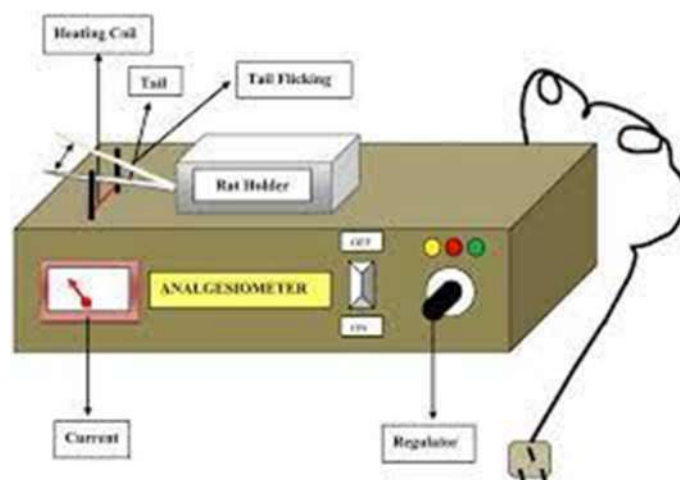
5. **Pole Climbing Apparatus:** It is used to study the anxiolytic activity in rat and mice. It is based on the principle of neuro-chemical mechanism of anti-anxiety drugs (benzodiazepam



6. **Analgesimeter:** It is used to study the analgesic effects of drugs in mice and rat. The inducer of pain (heat, physio compression and chemical inducers). The basal reaction time was noted as an inference of pain sensation drugs (morphine and other NSAID).



Hot Plate
Analgesimeter



Tail Flick
Analgesimeter

7. **Metabolic Cage:** It is used to study the metabolic parameters (faeces and urine) for the study of purgative or laxative in rat and mice.



Result :

The commonly used instruments in experimental pharmacology were studied.

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