

**AIM: TO STUDY THE EFFECT OF DIGITALIS ON FROG HEART**

**REQUIREMENTS:**

- Reservoir, Tubing, Screw clips, Syme's cannula, Clamp, Bosshead, Recording drum, Starling heart lever with stylet, Pin Hook, Thread, Syringe and Needle.

**DRUGS & SOLUTION:**

- Frog ringer solution,
- Frog ringer solution with one fourth  $\text{CaCl}_2$
- Digitalis (Digoxin Solution 50  $\mu\text{g/mL}$ )
- Calcium Chloride (10 % or 10  $\text{mg/mL}$ )

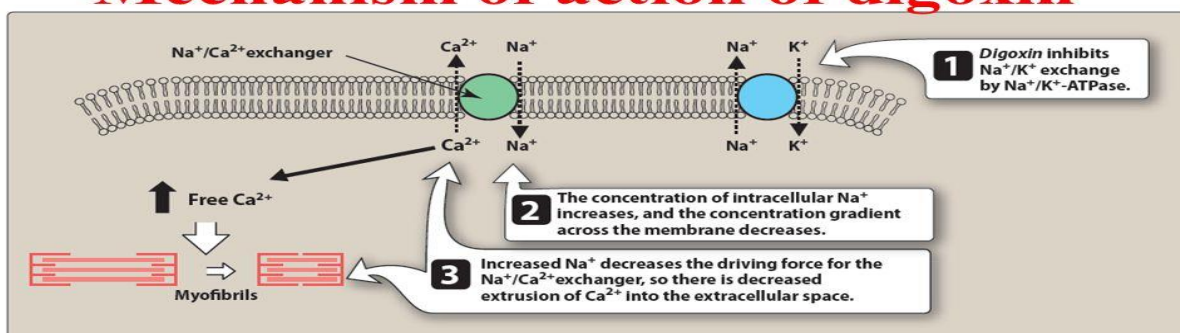
**PROCEDURE:**

- First dissect out the frog as per the CPCSEA guideline then mount the perfused frog heart.
- Record the heart rate and force of contraction for 5 min.
- Inject various dose of digitalis (0.1, 0.2, 0.3 & 0.4 mL) and same dose for  $\text{CaCl}_2$
- Change the normal frog ringer's solution with hypodermic ringer solution.
- Perfused for 10 min. during this period, the normal force of contraction of heart will reduce
- When the depression of heart is consistent, add digoxin (0.1 to 0.8 mL) and the  $\text{CaCl}_2$  (0.1 to 0.8 mL).

**OBSERVATION:**

Digitalis increases the force of contraction of the hearts and decrease the rate of hearts.

**Mechanism of action of digoxin**



- ❖ Increases the force of cardiac contraction, causing the cardiac output.
- ❖ Improved circulation leads to reduced sympathetic activity, which then reduces peripheral resistance with reduction in heart rate.
- ❖ Slows down conduction velocity through the AV node, which accounts for its use in atrial fibrillation.

TEACHER'S SIGNATURE