

Motility of isolated intestinal smooth muscle

Objective:

to record the rhythmic contraction of isolated intestinal smooth muscle and determine the pattern of changes in these contraction as a result of administration of certain having effects on autonomic nervous system.

Introduction:

electric activity of intestinal smooth muscle two type of potential:

1.slow wave

2.action potential spike

**Parasympathetic stimulation → increase slow wave and spikes
potential →increase contraction**

**Sympathetic stimulation→decrease slow wave and action
potential→ decrease contraction.**

Type of contraction:

1.tonic contraction: continuous contraction

2.rhythmic contraction.

Innervations of GIT:

1. autonomic nervous system

2. enteric nervous system

local control of wall of GIT

Ca⁺ muscle → activation

myosin head + actin site → sliding

contraction.

Type of movement:

- 1. peristalsis movement : propulsive movement.**
- 2. mixing movement: local contraction of smooth muscle.**

Experimental procedure:

- 1. Organ bath temperature 37 .,
nutrients glucose and electrolytes.**
- 2. physiograph.**
- 3. myograph .**
- 4. intestinal segment 3-5cm.**

Experiment protocol:

1. normal spontaneous contraction.

2. effect of temperature:

a. cold ringer solution

b. hot ringer solution.

3.effect of drugs:

a. Ach

b. b.epinephrine

c. c.atropine +Ach → no effect

d.prpronole+epinephrine → no effect.

4.effect of anoxia: decrease O₂ →

decrease motility.