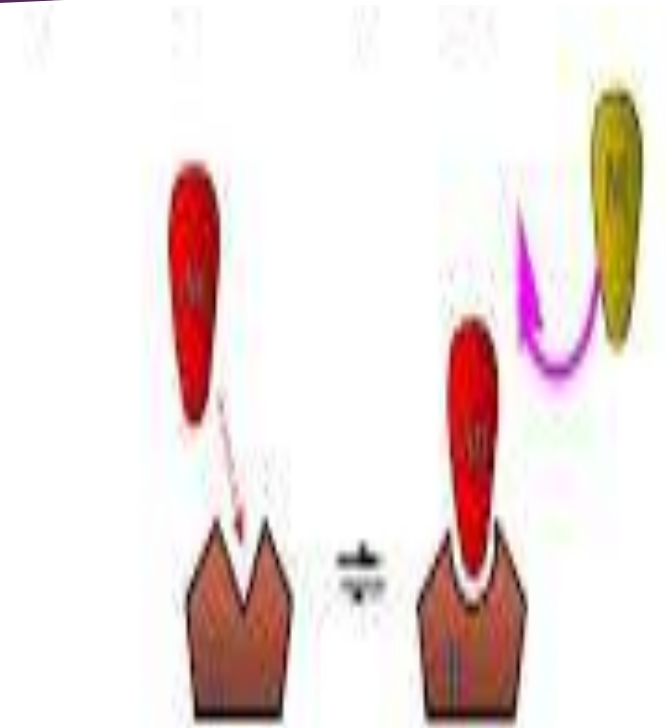




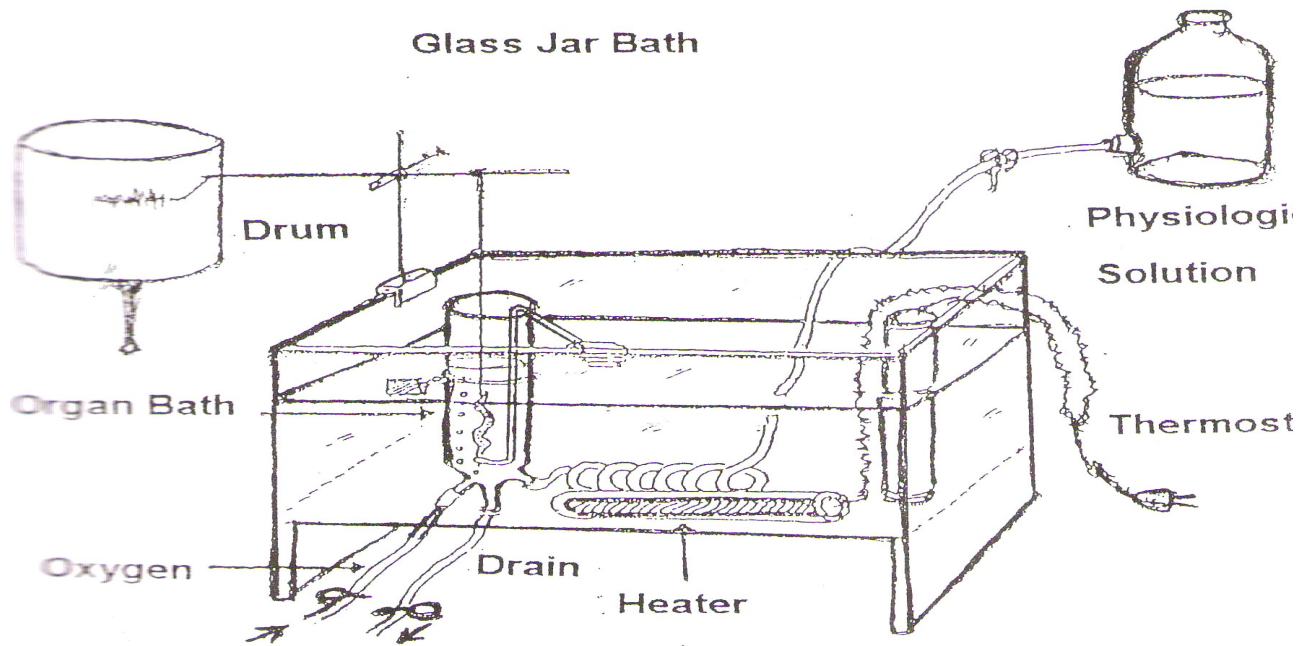
Studying Competitive Antagonism on Isolated Rabbit Jejunum

:Principle

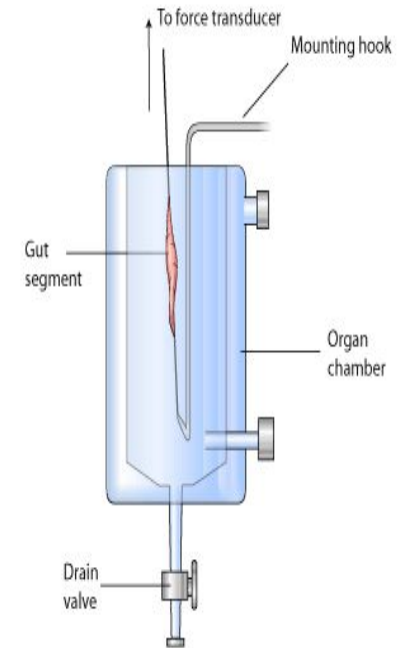
- ▶ Atropine is a competitive antagonist for Ach on muscarinic receptors (M) of the isolated rabbit jejunum.
- ▶ Higher concentrations of Ach are needed to displace atropine from M receptors and eliciting a response.



Isolated Tissue Preparations



A simplified diagram showing the Kymograph and organ bath preparation

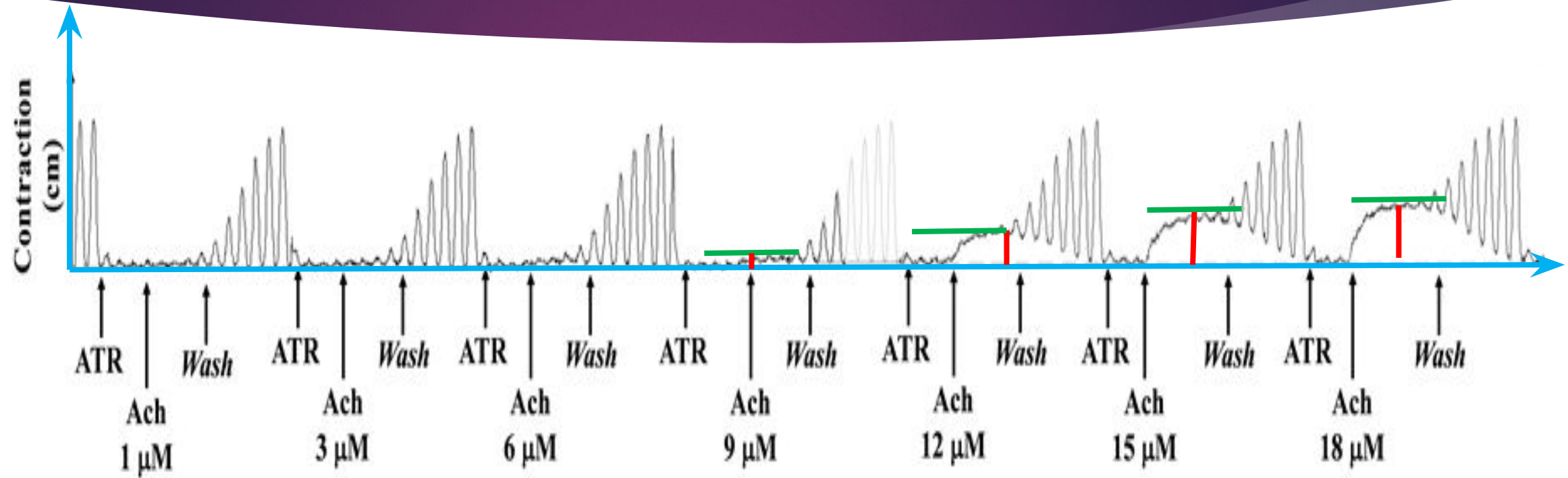


Assignment:

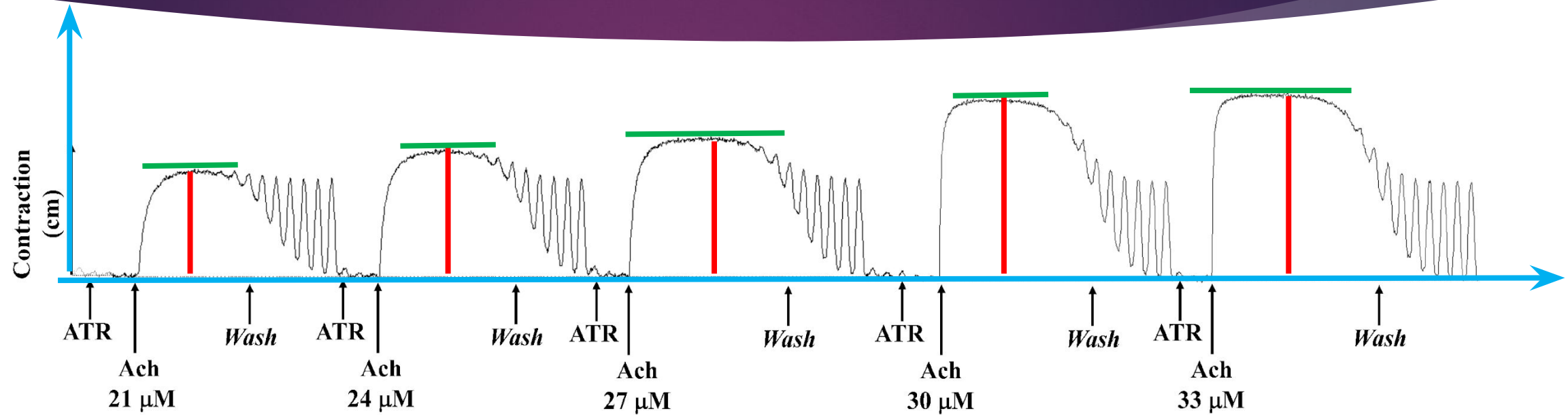
The figure on the next page depicts the response of isolated rabbit jejunum to different concentrations of Ach (1-33 mM) upon pre-treatment with a fixed concentration of atropine (1 mg/mL) prior to each Ach concentration.

Calculate the ED_{50} of Ach under this condition, and comment on the differences between Ach ED_{50} values in the absence/presence of atropine.

.Assignment



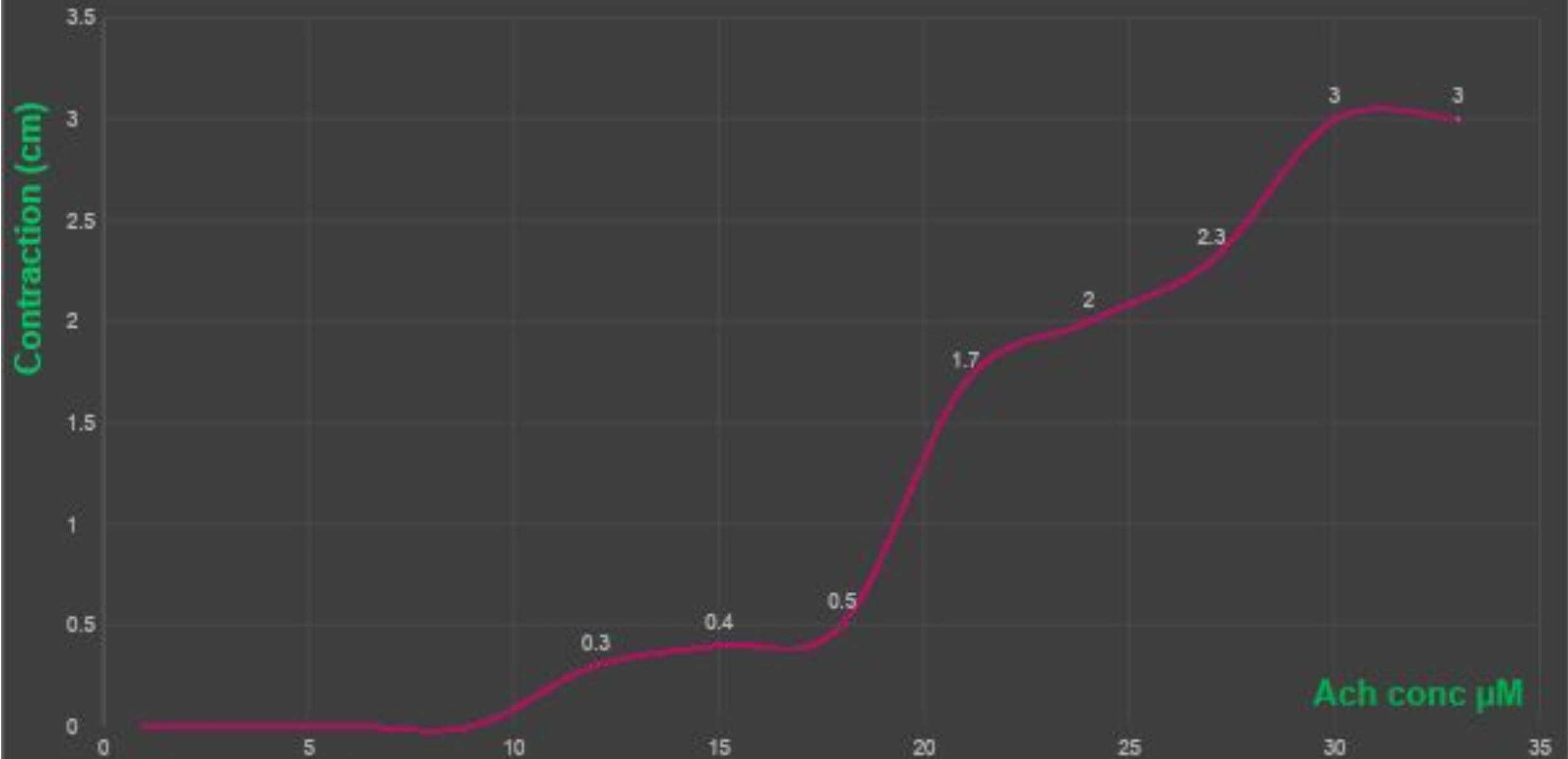
.Assignment



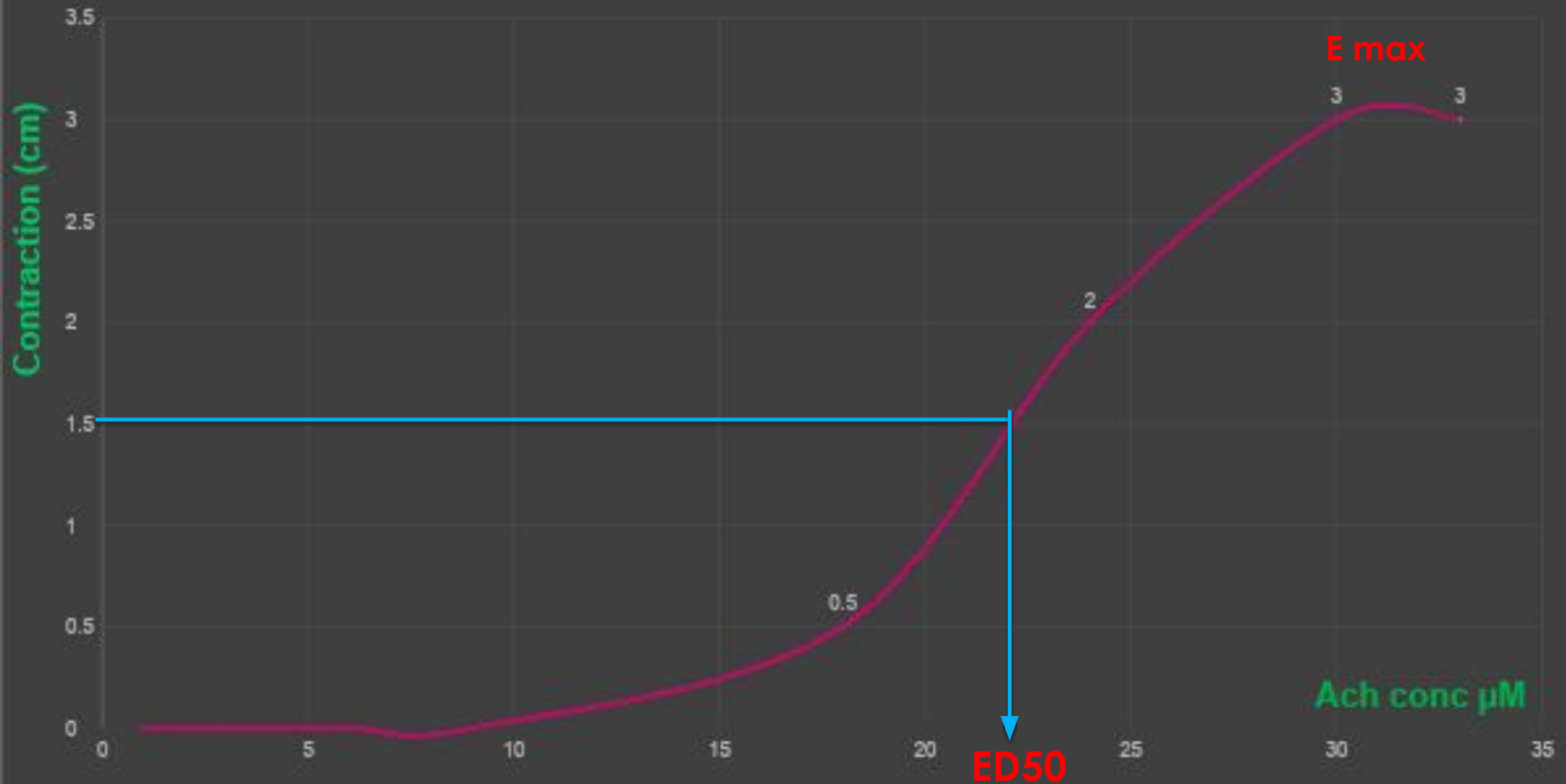
Assignment

Response (cm)	Ach conc (μM)
0	1
0	3
0	6
0	9
0.3	12
	15
	18
	21
	24
	27
	30
	33

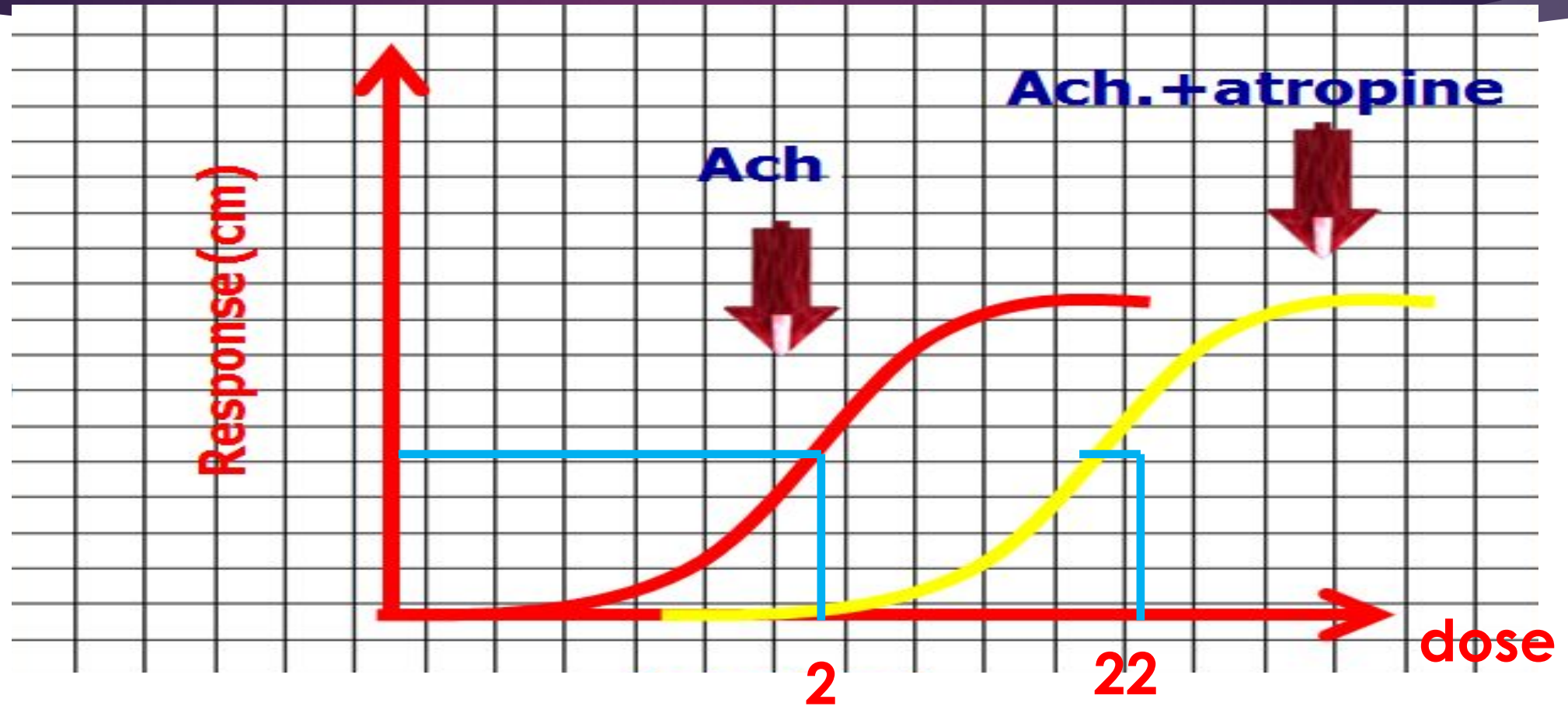
Dose response curve of acetylcholine in presence of atropine on isolated rabbit jejunum

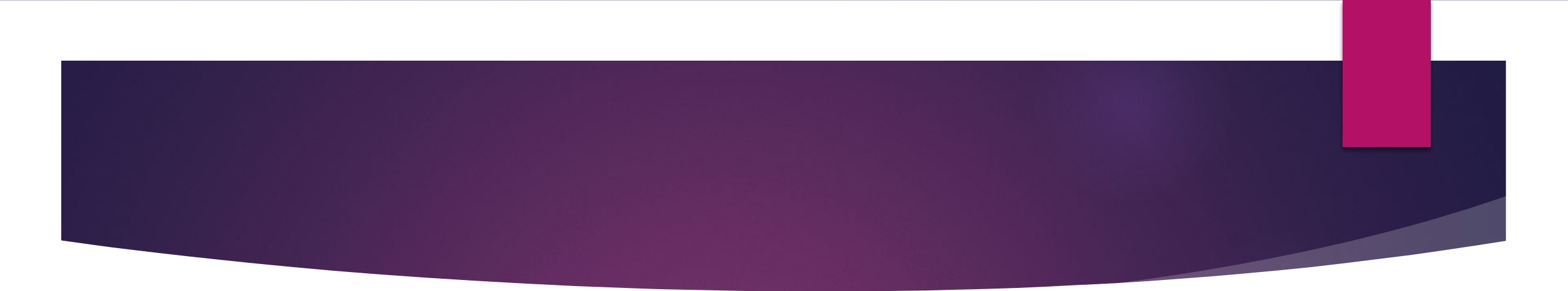


Dose response curve of acetylcholine in presence of atropine on isolated rabbit jejunum



Comment



- 
- ▶ Atropine is a reversible competitive muscarinic receptor antagonist causing parallel rightward shift of dose response curve of acetylcholine
 - ▶ Atropine decreases potency of acetylcholine and not affect efficacy.
 - ▶ ED50 Ach in presence of atropine is greater than that of Ach alone