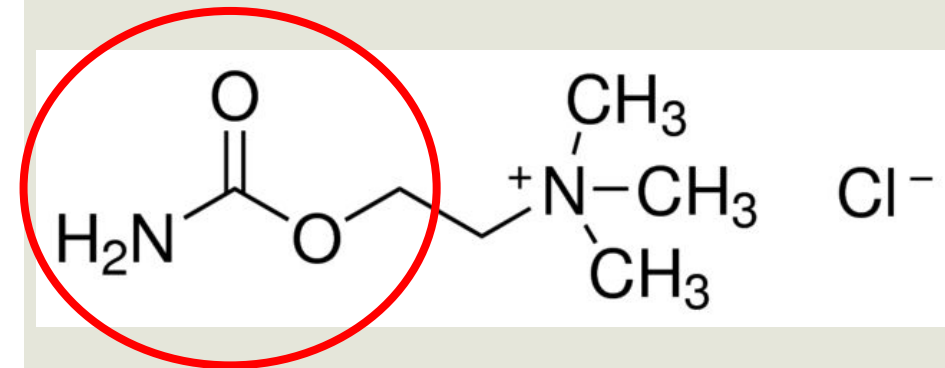
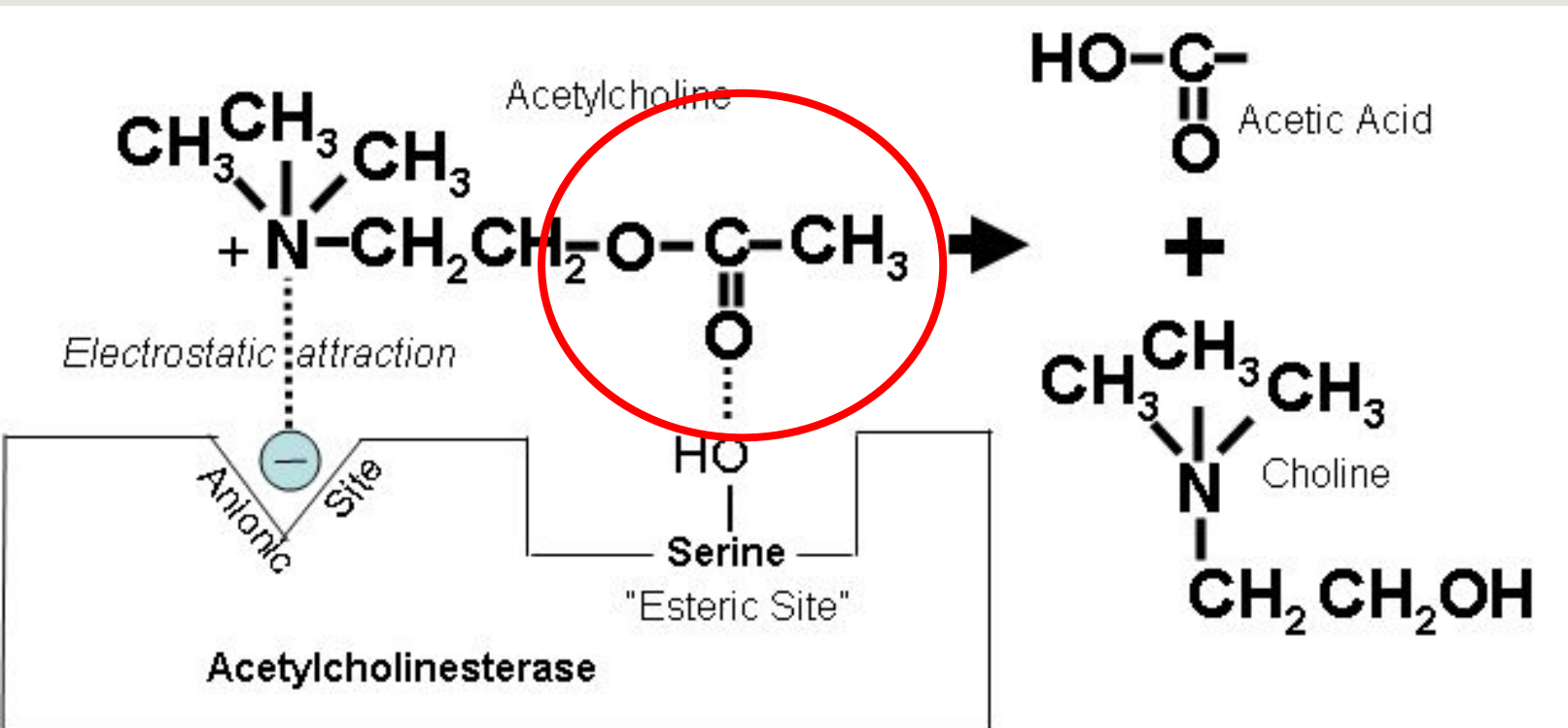


# ***In vivo* Comparison of the Duration of Action of Different Cholinomimetics on the Blood Pressure of Anaesthetized Cats**

**Presented by: Lina AbdEl Hameed  
Pharm. Bsc.**

# The metabolism by Acetylcholinesterase



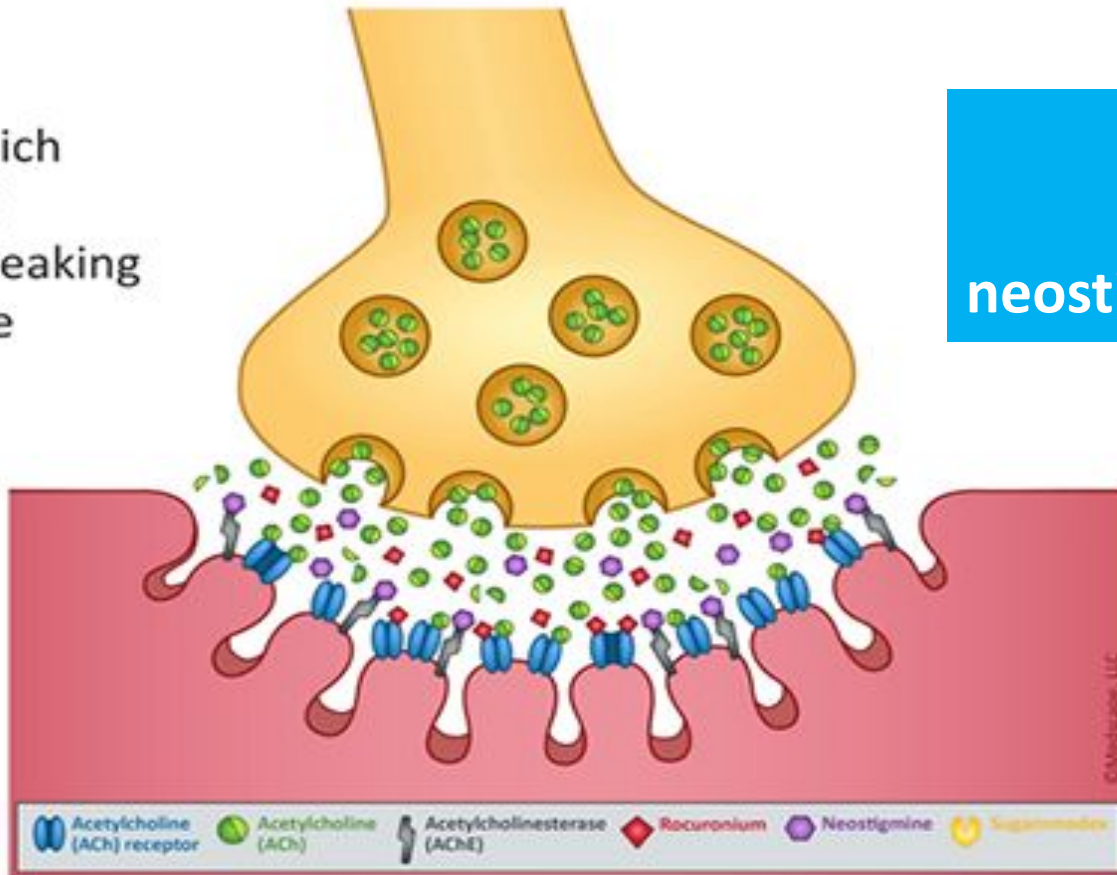
**Carbacol**



# Neostigmine mechanism of action

## Mechanism of Action (cont)

Introduction of neostigmine which blocks the AChE enzyme from breaking down ACh at the synaptic cleft



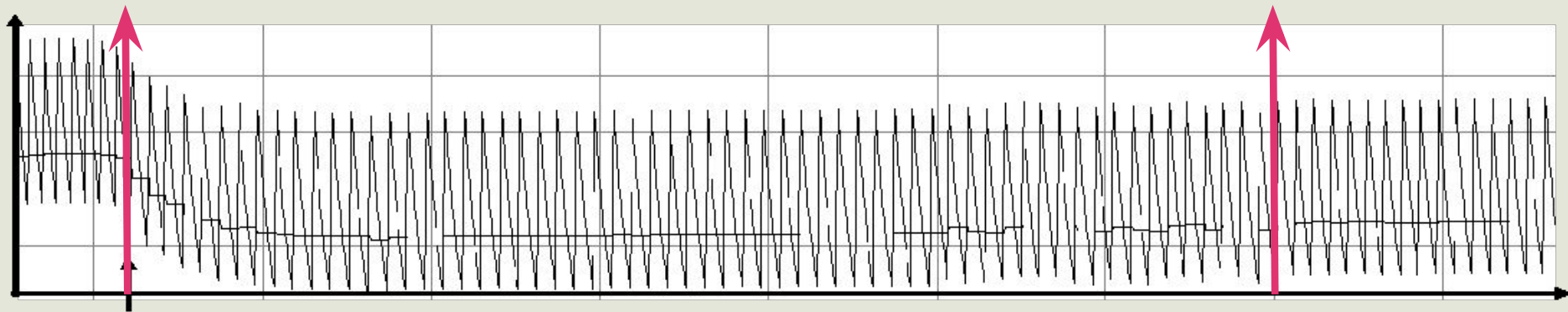
Duration of action

neostigmine > carbachol > acetylcholine.

## *Principle and Assignment*

- Acetylcholine (Ach) and other cholinomimetics differ in the rate of metabolic clearance, which in turn affects their duration of action.
- The blood pressure of anaesthetized cats was recorded following the administration of a single concentration of Ach, carbachol (Cch) or neostigmine (Neo) and results were presented in the following figure.
- Determine the duration of hypotensive action of each agent and explain your results.

# Assignment





The background features a dark green, chalkboard-like texture with faint, light-colored illustrations of scientific and educational items. On the left, there is a globe on a stand. Above it, a stack of books is visible. To the right, a microscope is depicted. Various geometric shapes like circles, rectangles, and arrows are scattered throughout the background.

# **In vivo Identification of Angiotensin II Receptor Blockers on Pithed Rats Blood Pressure**



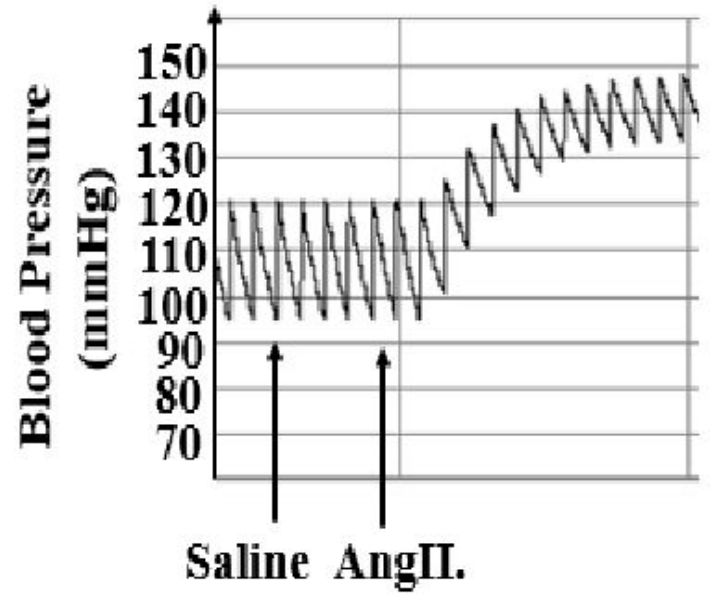
## *Principle:*

- **Injection of Angiotensin II (AngII) into pithed rats elevates the blood pressure via its angiotensin II receptors.**
- **Compounds which block angiotensin II receptors will prevent this rise in blood pressure.**
- **Pithing of the rats eliminates baroreceptors reflexes.**

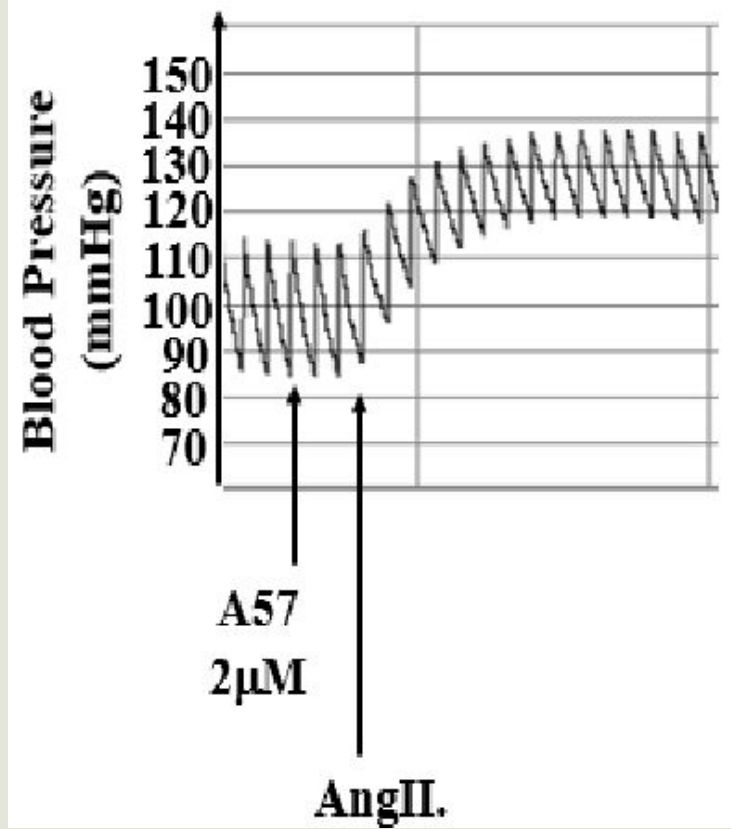
## *Assignment:*

- **Compound A57 was evaluated in pithed rats for its angiotensin II receptors blocking activity. Consider the following figures and calculate the percentage reduction in blood pressure by each concentration of A57, and determine the ED50 of this compound .**



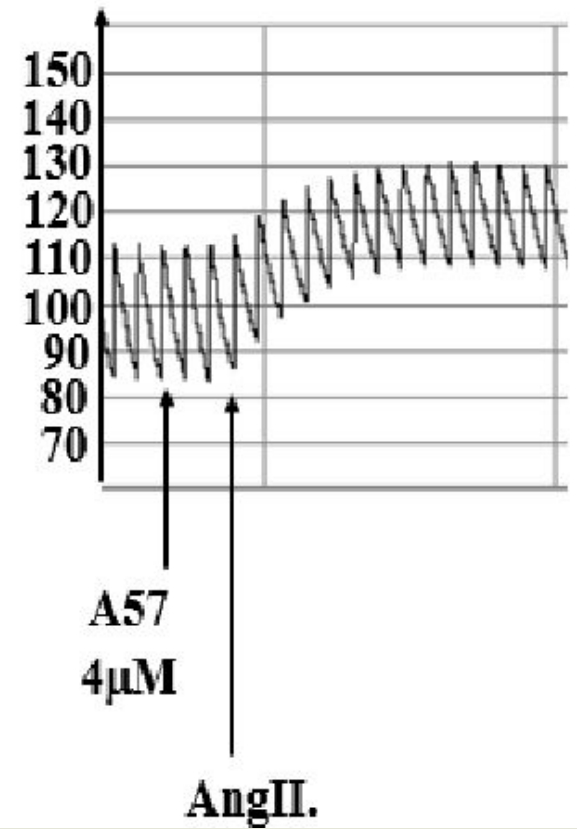


Saline AngII.



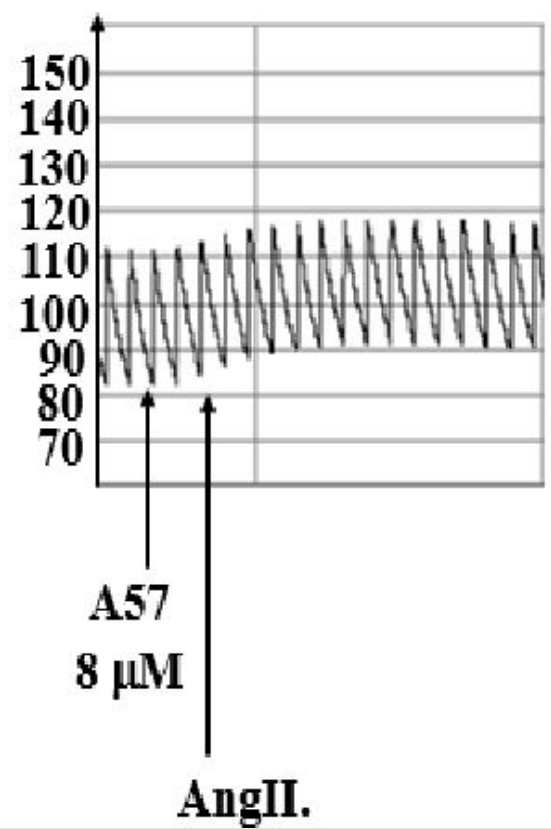
A57  
2  $\mu$ M

AngII.



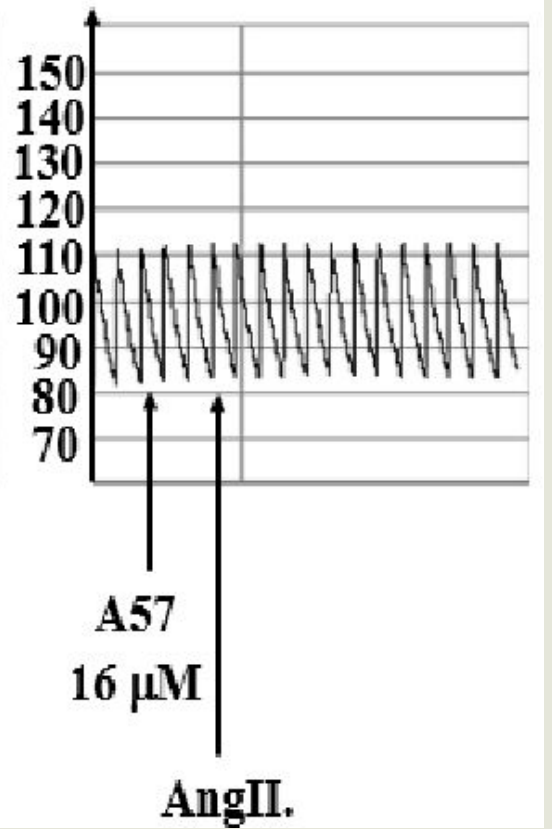
A57  
4  $\mu$ M

AngII.



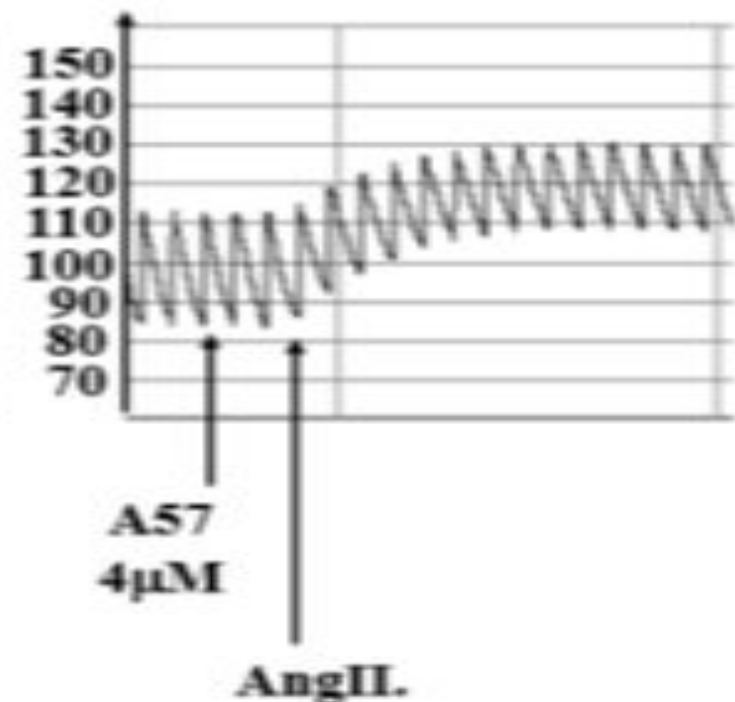
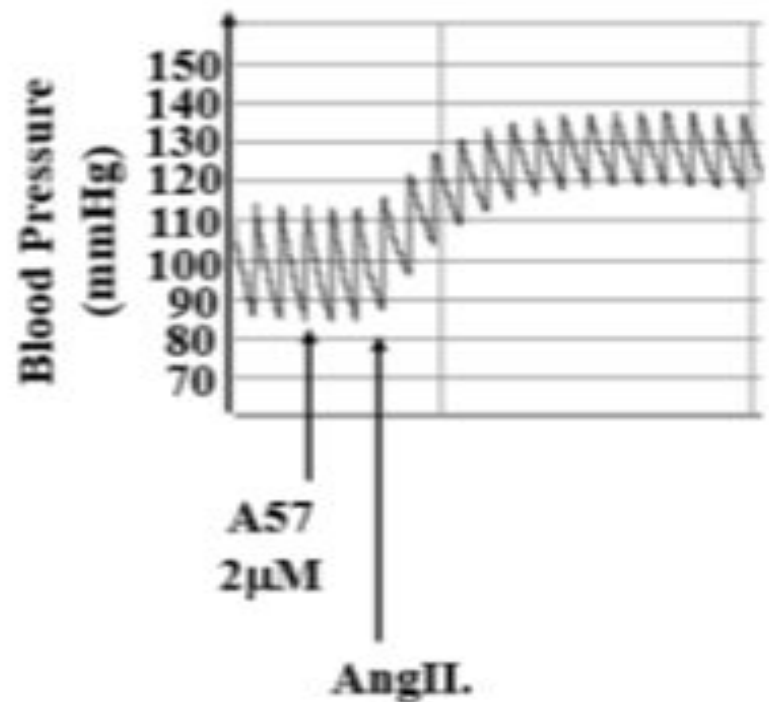
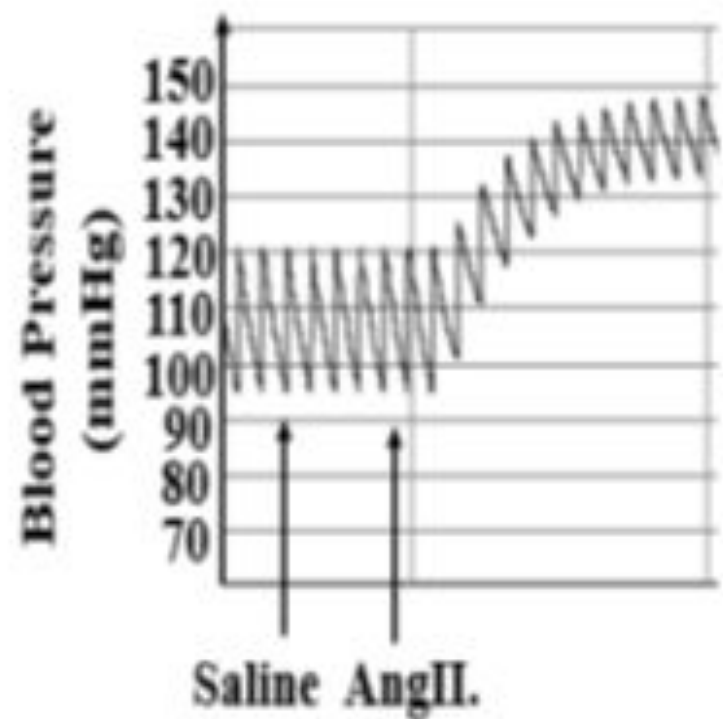
A57  
8  $\mu$ M

AngII.



A57  
16  $\mu$ M

AngII.



Conc ( $\mu\text{M}$ )	% inhibition
2	$150-140/150 \times 100$
4	$150-130/150 \times 100$
8	$150-120/150 \times 100$
16	$160-110/150 \times 100$



T H A N K

Y 😊 U!