



## Homework 9

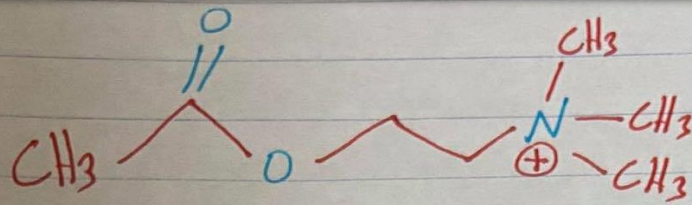
### Medicinal Chemistry 1

#### Cholinergics, Anticholinergics and Anticholinesterases

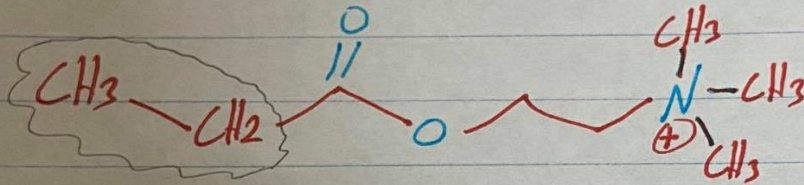
Instructor Amin Thawabteh

Student name and I.D Muhammad Musleh /1162595

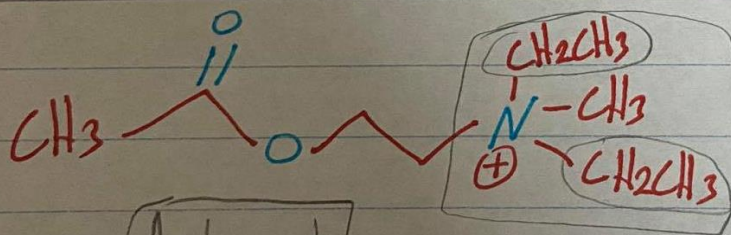
1-



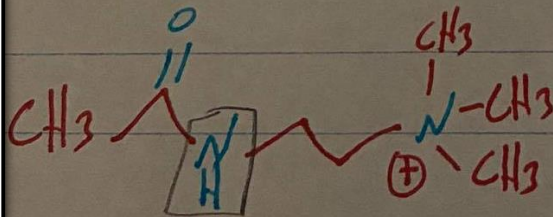
Agonist



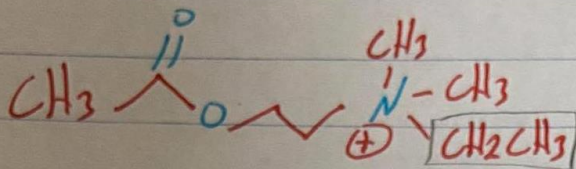
Antagonist; Higher MW esters



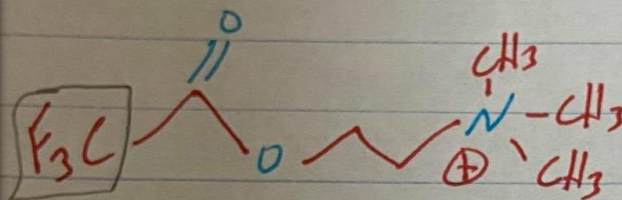
Antagonist



Agonist

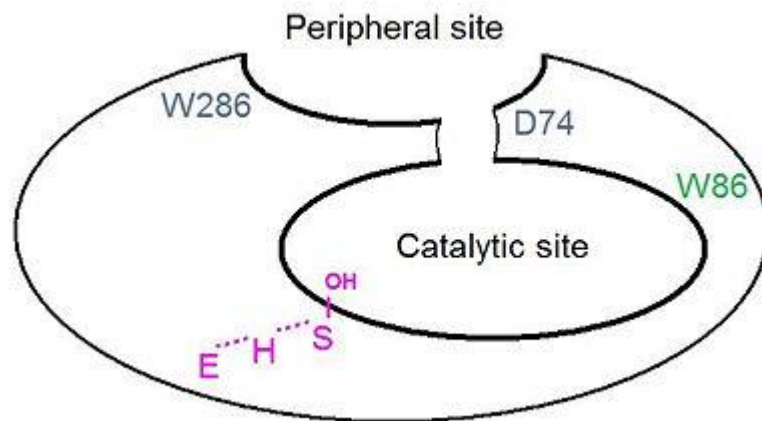


Partial Agonist



Antagonist; Higher MW esters.

- 2- (4) There are many of binding interaction that holding Ach in binding site of AChE. Tryptophan residue forms  $\pi$ - cation interaction(N on the Ach has a positive charge and active site of AChE has a negative charge so do ionic interaction with N-cationic Quaternary Amine , Histidine acts as Acid-Base catalyst, Serine acts as nucleophile, Aspartate residue interacts with Histidine residue to orientate and active the ring



- 3- (6) Selective to M2 receptor, no effect of ionic strength because of the distance between N and O. However, Pilocarpine does not have quaternary ammonium group. (!)