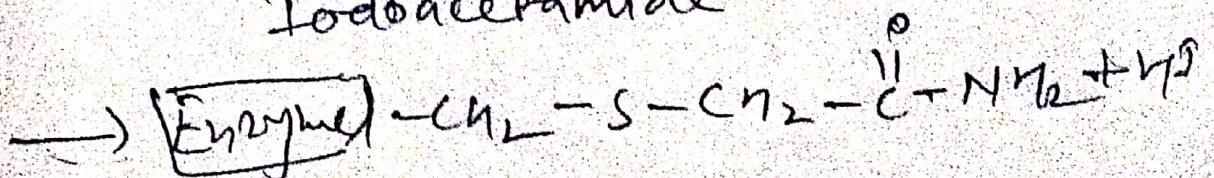
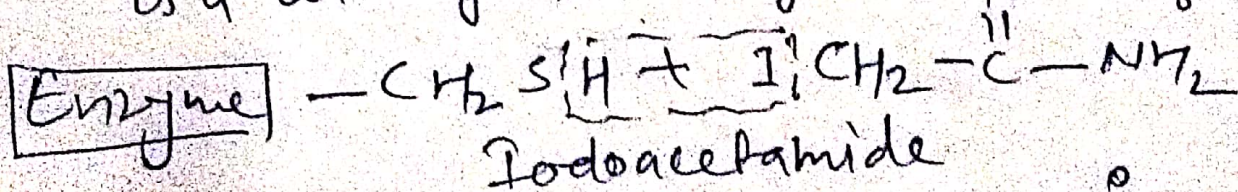


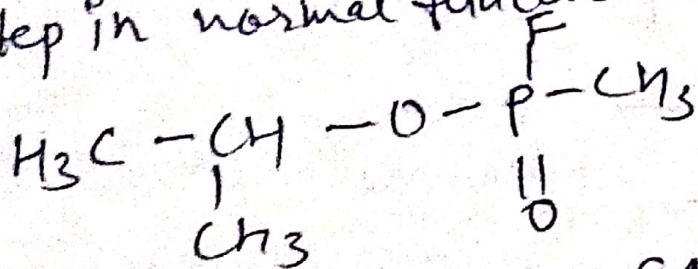
Irreversible enzyme inhibition :-

Irreversible inhibition was once categorized and tested as noncompetitive inhibition, it is now recognized as a distinct type of inhibition. Irreversible inhibitors are those that combine with or destroy a functional group on the enzyme that is essential for its activity. In fact an irreversible inhibitor dissociates ~~very~~ very slowly from its target enzyme because it becomes very tightly bound to its active site, thus inactivating the enzyme molecule. The bonding between the inhibitor and enzyme may be covalent or noncovalent.

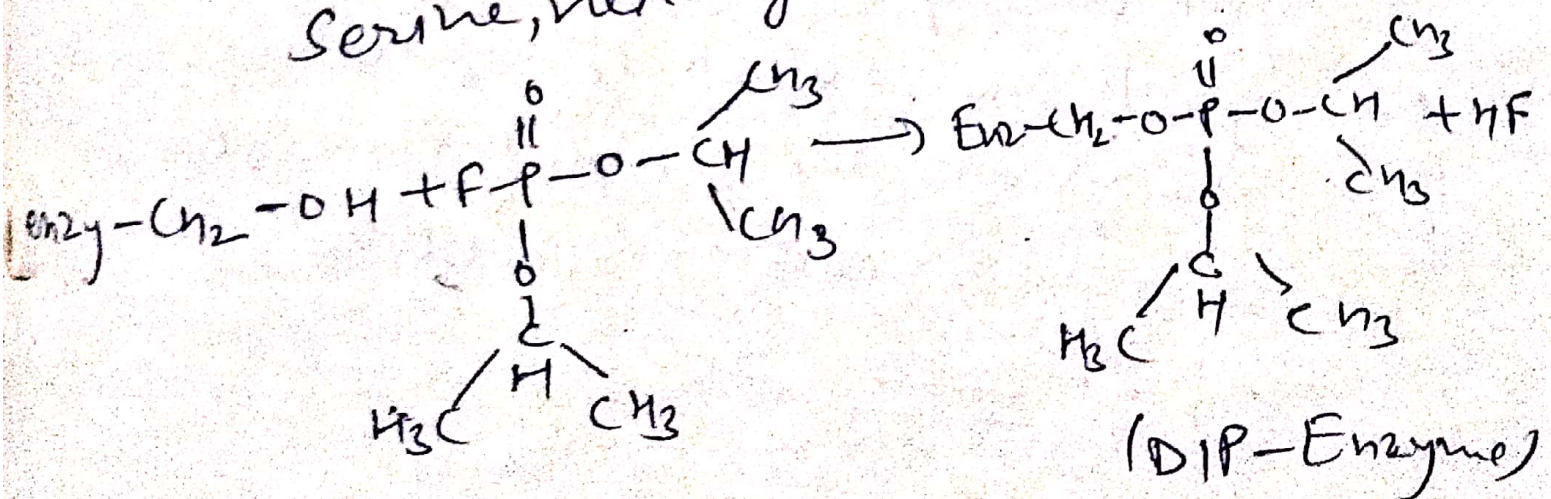
ex-
1. - Alkylating reagents, such as iodoacetamide, irreversibly inhibit the catalytic activity of some enzyme by modifying cysteine and other side chains. Iodoacetamide is a widely-used agent for the detection of ^{SH} ^{for the detection of} ^{Sulphydryl group.}



2- Organophosphorus compounds; such as diisopropyl phosphorofluoridate. $DIPF^r$ are potent irreversible inhibitors of enzymes that have active seryl residues at their catalytic sites. $DIPF$ is closely related chemically to nerve gas, whose lethality is due to the inactivation of acetylcholinesterase, an enzyme critical for the transmission of nerve impulse. Acetylcholinesterase cleaves the neurotransmitter acetylcholine, an essential step in normal functioning of nervous system.



Serine, nerve gas



DIPF
 A special class of irreversible inhibitors are the suicide inhibitors. These compounds are relatively unreactive until they bind to the active site of specific enzyme. A suicide inhibitor is designed to carry out the first few chemical steps of the normal enzyme reaction. Instead of