Literature Review:

The present work, it is proposed to plan for the synthesis of some heterocyclic compounds of biological interest. During last few years’ interest in this area was focused on the evaluation of biological activities of various heterocyclic compounds with chemical moieties such as imidazoline, isoxazolines, Pyrazoline, pyrimidines, etc. The up to date literature survey on above derivatives are given briefly."

Rakesh Mistry et al., Synthesized Azlactone Derivatives and Imidazolinone Derivatives and Studies of their Antimicrobial Activity. The antimicrobial activity of the synthesised compounds has been studied against the cultures “Staphylococcus aureus”, “Escherichia coli” and “Candela albicans”

Choudhary N., et al., a series of chalcone derivatives were designed based on QSAR analysis. The designed compounds were synthesized by Claisen Schmidt condensation and evaluated for anti-inflammatory, antioxidant and antiulcer activities.

Mandge shailendra, et al., a series of chalcone derivatives were synthesized and their structure by Claisen-Shimidt base catalyzed condensation of appropriate aromatic ketones or substituted aromatic ketones with benzaldehydes or substituted benzaldehydes.

Adhikari V.A., et al., Synthesized some new 4-arylaminoisoxazolo [5,4-d] pyrimidine derivatives. All the compounds were evaluated for in vitro antibacterial activity against five pathogenic microorganism viz. E.coil, Proteus vulgaris, Proteus aurigasa, Klebsiella pneumonia and Staphylococcus aureus by the disc diffusion method.

Mahesh R., et al., and Pandeya SN., et al., [51], Researchers have studied various biological activities of isoxazoline and their Mannich bases and conform that isoxazoline heterocycles with Mannich bases have shown good activity.

Solankee Anjani, et al., Synthesized pyrazolines, amino pyrimidines and pyrimidinethiones by cyclization of chalcones with hydrazine hydrate, guanidine nitrate and thiourea respectively. The synthesized compounds were screened for their antibacterial activity.
Bharathi K., et al. \textsuperscript{43} reported the synthesis of substituted 1-Acetyl-5-(substituted phenyl)-3-(aminophenyl)-2-pyrazolines and 5-(substituted phenyl)-3-(amino phenyl) isoxazolines. These compounds showed antioxidant activity.

Jadhav S. B., et al., \textsuperscript{44} A new series of 1\textit{H}-3-(4’-substituted phenyl)-5-(6’’-methoxy naphthalene)-2-pyrazolines and 1\textit{H}-3-(4’-substituted phenyl)-5-(6’’-methoxynaphthalene)-isoxazolines were synthesized by reacting 1-(4’-substituted phenyl)-3-(6’’-methoxy naphthalene)-2-propene-1-one with hydrazine hydrate and hydroxylamine hydrochloride respectively.

2-pyrazolines are reported as antibacterial\textsuperscript{45}, antifungal\textsuperscript{46-48}, antimicrobial\textsuperscript{49}, antiviral\textsuperscript{50}, anti-arthritis\textsuperscript{51} and anti-inflammatory\textsuperscript{52} agents.

Infectious diseases caused by bacteria, fungi and other parasite are major threat for health of mankind. With availability of number of drugs in market, the problem is not solved but hastily increases with various cases of multi drug resistance parasites, bacteria and fungi. And this becomes major threat to health of humankind worldwide. So to come out from this budding problem, scientific community all over the world are trying to discover the new affordable and more active compounds which may cross all barrier and rapidly reach to the drug stages. 1,3-diaryl prop-2-en-1-one very well known as Chalcone, is the molecule which was known from many decades due to its wide range of biological activities such as analgesic\textsuperscript{53}, antiinflammatory\textsuperscript{1}, antiplatelet\textsuperscript{54}, antiulcer\textsuperscript{55}, antimalarial\textsuperscript{56}, antiparasitic\textsuperscript{57}, antioxidant\textsuperscript{58}, anti tuberculosis\textsuperscript{59}. Chalcone exist as either E or Z isomer, but E isomer is most stable form and consequently major chalcone are isolated as E isomer.

Shivkumar B., et al.,\textsuperscript{60} Synthesized fourteen new pyrimidines from aryloxyacetic hydrazides which were converted into their respective salts of potassium dithiocarbazinates. Then each of these was condensed with two different 4-aryl-6-methyl-2-oxo-pyrimidin-5-carbohydrazides to yield title compounds. Antimicrobial activities of these compounds have been evaluated.