II. REVIEW OF LITERATURE

1. Chen et al., (2002)\textsuperscript{71} have reported about the synthesis and anti-inflammatory evaluation of 9-anilinoacridine and 9-phenoxyacridine derivatives.

2. Rastogi et al., (2002)\textsuperscript{72} have reported about the synthesis of antitumor AHMA linked to DNA minor groove binding agents and its biological evaluation.

3. Gamage et al., (1997)\textsuperscript{73} have reported about the Structure-activity relationships for the antileishmanial and antitypanosomal activities of 1'-substituted 9-anilinoacridines.

4. Jurlina et al., (1987)\textsuperscript{74} have reported about the redox chemistry of the 9-anilinoacridine class of antitumor agents.
5. **Atwell et al., (1986)**\(^{75}\) have reported about the synthesis of 3'-methylamino analogues of amsacrine with *in vivo* solid tumour activity.

\[
\begin{align*}
\text{Structure 1}
\end{align*}
\]

6. **Denny et al., (1983)**\(^{76}\) have reported about the anilino ring geometry of amsacrine and derivatives: relationship to DNA binding and antitumor activity.

\[
\begin{align*}
\text{Structure 2}
\end{align*}
\]

7. **Denny et al., (1983)**\(^{77}\) have reported synthesis of 3-substituted 5-carboxamido derivatives of amsacrine as potential antitumor agents.

\[
\begin{align*}
\text{Structure 3}
\end{align*}
\]

8. **Denny et al., (1977)**\(^{78}\) have reported about the synthesis of analogues of the 4'-(9-acridinylamino)methane sulfonanilides as potential antitumor agents.

\[
\begin{align*}
\text{Structure 4}
\end{align*}
\]
9. Atwell et al., (1977)\textsuperscript{79} has reported about the synthesis of latentiated congeners of the 4'-\(\text{9-acridinylamino}\)methane sulfonanilides as potential antitumor agents.

\[
\text{HN} \quad \text{N} \quad \text{SO}_2 \\
\quad \text{N} \quad \text{N} \quad \text{N} \\
\text{H} \\
\text{2N} \\
\text{N} \quad \text{N} \\
\text{H} \\
\text{2N}
\]

10. Kapuriya et al., (2008)\textsuperscript{80} have reported about the synthesis and biological activity of stable and potent antitumor agents, aniline nitrogen mustards linked to 9-anilinoacridines via a urea linkage.

\[
\begin{array}{c}
\text{N} \\
\text{N} \\
\text{HN} \\
\text{O} \\
\text{HN} \\
\text{HN} \\
\text{N} \quad \text{Cl} \\
\text{Cl} \\
\text{Cl} \\
\end{array}
\]

11. Chen et al., (2008)\textsuperscript{81} have reported about the synthesis and \textit{in vitro} cytotoxicity of 9-anilinoacridines bearing N-mustard residue on both anilino and acridine rings.

\[
\begin{array}{c}
\text{Cl} \\
\text{Cl} \\
\text{N} \\
\text{O} \\
\text{Cl} \\
\text{Cl} \\
\end{array}
\]

12. Plouvier et al., (1994)\textsuperscript{82} have reported about the synthesis and DNA binding antitumor activity of a thiazole-containing analog of netropsin linked to an acridine chromophore.

\[
\begin{array}{c}
\text{HN} \\
\text{N} \\
\text{O} \\
\text{N} \\
\text{S} \\
\text{HN} \\
\text{N} \\
\text{HN} \\
\text{S} \\
\end{array}
\]
13. **Dollinger et al., (2006)**\(^8^3\) have reported about the synthesis and biological investigations potent antiprion active acridine derivatives.

![Acridine Derivative](image1)

14. **Wakelin et al., (2003)**\(^8^4\) have reported about the synthesis of bisintercalating threading diacridines: relationships between DNA binding, cytotoxicity and cell cycle arrest.

![Bisintercalating Threading Diacridines](image2)

15. **Lee et al., (1996)**\(^8^5\) have reported about the effects of acridine substitution on the hypoxia-selective cytotoxicity and metabolic reduction of the bis-bioreductive agent nitracrine \(N\)-oxide.

![Nitracrine N-Oxide](image3)

16. **Cholody et al., (1995)**\(^8^6\) have reported about the synthesis of bisimidazo acridones and related compounds: new antineoplastic agents with high selectivity against colon tumours.

![Bisimidazo Acridones](image4)
17. **Kalirajan et al., (2007)**\(^{87}\) have reported about the synthesis of cyclized chalcone derivatives as antimicrobials.

![Cyclized Chalcone Derivative](image1)

18. **Tabarrini et al., (1999)**\(^{88}\) have reported about the synthesis of modified quinolones as antitumor acridones.

![Modified Quinolones](image2)

19. **Antonini et al., (1997)**\(^{89}\) have reported about the synthesis of 1-[(ω-aminoalkyl) amino] -4- [N- (ω-aminoalkyl) carbamoyl] -9- oxo - 9,10-dihydro acridines as intercalating cytotoxic agents.

![Acridine Derivatives](image3)

20. **Spicer et al., (1997)**\(^{90}\) have reported about the structure-activity relationships for acridine-substituted analogues of the mixed topoisomerase I/II inhibitor \(N-[2-(dimethylamino)ethyl]acridine-4-carboxamide\).

![Acridine-4-carboxamide](image4)
21. Kalirajan et al., (2009)\textsuperscript{91} have reported about the synthesis of some heterocyclic derivatives from chalcones.

22. Atwell et al., (1984)\textsuperscript{92} have reported about the synthesis and biological activity of dibasic 9-aminoacridine-4-carboxamides, a new class of antitumor agent.

23. Zahran et al., (2009)\textsuperscript{93} have reported about the synthesis and cellular cytotoxicity of new N-substituted indole-3-carbaldehyde and their indolylchalcones.

24. Bacherikov et al., (2005)\textsuperscript{94} has reported about the synthesis of potent antitumor 9-anilinoacridines bearing an alkylating N-mustard residue on the aniline ring.

25. Osama et al., (2003)\textsuperscript{95} have reported about the synthesis and antimicrobial activity of some new cyanopyridines, isoxazoles, pyrazoles and pyrimidines bearing sulphonamide moiety.
26. Murthy et al., (2006)\textsuperscript{96} have reported about the synthesis and characterization of a new chromano isoxazole.

\[ \text{\includegraphics[width=0.5\textwidth]{image1.png}} \]

27. Panda et al., (2009)\textsuperscript{97} have reported about the synthesis, anti-inflammatory and antibacterial activity of novel indolyl-isoxazoles.

\[ \text{\includegraphics[width=0.5\textwidth]{image2.png}} \]

28. Katritzky et al., (2001)\textsuperscript{98} have reported about the regioselective synthesis of polysubstituted pyrazoles and isoxazoles.

\[ \text{\includegraphics[width=0.5\textwidth]{image3.png}} \]

29. Manna et al., (2005)\textsuperscript{99} has reported synthesis of some pyrazole derivatives and preliminary investigation of their affinity binding to P-glycoprotein.
30. Voskiene et al., (2007)\textsuperscript{100} has reported about the synthesis and structural characterization of products condensation 4-carboxy-1-(4-styrylcarbonylphenyl)-2-pyrrolidinones with hydrazines.

![Chemical structure](image1)

31. Bouabdallah et al., (2006)\textsuperscript{101} has reported about the synthesis of new 1,1'-di(4-nitro or 2-nitrophenyl)-5,5'-disubstituted-3,3'-bipyrazoles under microwave irradiation and classical heating conditions.

![Chemical structure](image2)

32. Chimenti et al., (2007)\textsuperscript{102} has reported about the synthesis of monoamine oxidase isoform-dependent tautomeric influence in the recognition of 3,5-diaryl pyrazole inhibitors.

![Chemical structure](image3)

33. Katritzky et al., (2001)\textsuperscript{103} has reported about the regioselective synthesis of polysubstituted pyrazoles and isoxazoles.

![Chemical structure](image4)
34. Suriya prakash et al., (2007)\textsuperscript{104} has reported about the microwave mediated combinatorial synthesis of 1-aryl-3,4-diaroylpyrazoles from 3-arylsydnones and 1,2-diarylacetylenes.

![Chemical structure](image1)

35. Brijesh kumar et al., (2003)\textsuperscript{105} has reported about the synthesis of substituted 1H-pyridazin-4-ones, 2-H-pyrazolo [4, 3-c] pyridazines, pyrazoles and isoxazole derivatives.

![Chemical structures](image2)

36. Gaikawad et al., (2000)\textsuperscript{106} has reported about the synthesis of newer coumarinoacetyl pyrazoles and their antimicrobial activities.

![Chemical structure](image3)

37. Gajare et al., (1997)\textsuperscript{107} has reported about the synthesis of some new pyrazoles and their antimicrobial activity.
38. Bijoy P. Mathew et al., (2010)\textsuperscript{108} have reported synthesis of some novel oxazine derivatives and their antimicrobial activity.

\[
\begin{array}{c}
\text{R} \quad \text{O} \quad \text{N} \\
\text{R}_1 \quad \text{R}_2 \quad \text{R}_3
\end{array}
\]

39. R.Kalirajan et al. (2011)\textsuperscript{109} have reported about the microwave assisted synthesis and evaluation of pyrazole derivatives of benzimidazoles.

\[
\begin{array}{c}
\text{N} \\
\text{H} \quad \text{N} \\
\text{R} \quad \text{Ar}
\end{array}
\]

40. Guodong Shen et al., (2006)\textsuperscript{110} have reported about the synthesis of benzoxazine and 1,3-oxazine derivatives.

\[
\begin{array}{c}
\text{N} \\
\text{O} \\
\text{Cl}
\end{array}
\]

41. Malleshappa N. Noolvi et al., (2011)\textsuperscript{111} have reported about the Synthesis and in vitro antitumor activity of substituted quinazoline and quinoxaline derivatives: Search for anticancer agent.

\[
\begin{array}{c}
\text{F} \\
\text{Cl} \quad \text{NH}
\end{array}
\]
42. Basappa et al., (2010)\textsuperscript{112} have reported about a small oxazine compound as an anti-tumor agent: A novel pyranoside mimetic that binds to VEGF, HB-EGF, and TNF-\(\alpha\).

43. Yukako Tabuchi et al., (2009)\textsuperscript{113} have reported about the Preparation of novel (Z)-4-ylidenebenzo[b]furo[3,2-d][1,3]oxazines and their biological activity.

44. Birsen Tozkoparan et al., (2002)\textsuperscript{114} have reported about the synthesis of some 1,2,4-triazolo[3,2-b]-1,3-thiazine-7-ones with potential analgesic and anti-inflammatory activities.

45. Vishnu K. Tandon et al., (2006)\textsuperscript{115} have reported, Naphtho[2,3-b][1,4]-thiazine-5,10-diones and 3-substituted-1,4-dioxo-1,4-dihydronaphthalen-2-yl-thioalkanoate derivatives: Synthesis and biological evaluation as potential antibacterial and antifungal agents.
46. **Maloy Kumar Parai et al., (2009)**\(^{116}\) have reported, A convenient synthesis of chiral amino acid derived 3,4-dihydro-2H-benzo[b][1,4]thiazines and antibiotic levofloxacin.

![Image](https://via.placeholder.com/150)

47. **Sethuraman Indumathi et al., (2009)**\(^{117}\) have reported, L-Proline-catalysed facile green protocol for the synthesis and antimycobacterial evaluation of [1,4]-thiazines.

![Image](https://via.placeholder.com/150)

48. **V Ambrogi et al., (1990)**\(^{118}\) have reported, Synthesis, antibacterial and antifungal activities of several new benzo- naphtho- and quinolino-1,4-thiazine and 1,5-thiazepine derivatives.

![Image](https://via.placeholder.com/150)

49. **Mamoru Koketsua et al., (2002)**\(^{119}\) have reported, Synthesis of 1,3-thiazine derivatives and their evaluation as potential antimycobacterial agents.

![Image](https://via.placeholder.com/150)

50. **W. Malinka et al., (2002)**\(^{120}\) have reported, Preparation of novel derivatives of pyridothiazine-1,1-dioxide and their CNS and antioxidant properties.