

Sr. No.	Contents	Pg. No.
1	General Introduction	
1.1	Introduction	01
1.2	Pyrazole	03
1.2.1	Pyrazole containing natural products	03
1.2.2	Synthetic Methods of Pyrazole	03
1.2.3	Pyrazole bearing Pharmacological Agents	04
1.2.4	1H-Pyrazole-4-Carbaldehyde	05
1.3	Quinoline	11
1.3.1	Quinoline containing natural products	12
1.3.2	Synthetic methods of quinoline	13
1.3.3	Quinoline bearing Pharmacological Agents	14
1.3.4	Synthesis of 2-chloro-3-formyl quinoline	15
1.4	Antimicrobial study	21
1.4.1	Pathogens	22
1.4.2	Antimicrobial agents	26
1.4.3	Antimicrobial Susceptibility Testing	27
1.4.4	Antimycobacterial Study	31
1.4.5	Antimalarial Study	33
1.5	Cytotoxicity	35
1.6	Outline of the Present Study	35
	References	39
2	Synthesis of fluoro substituted novel pyrazolylpyrazolines scaffold and their pharmacological screening	
2.1	Preamble	45
2.2	Pyrazoline	45
2.3	Synthesis of Pyrazoline	46
2.4	Biological Screening	47
2.5	Present Work	52
2.6	Reaction Scheme	53
2.7	Experimental	54
2.8	Synthesis of fluoro substituted novel pyrazolylpyrazolines scaffold	54
2.9	Preliminary and Spectral Characterization	56
2.10	Biological Results	69
2.10.1	Antibacterial Activity	69
2.10.2	Antifungal Activity	71
2.10.3	Antituberculosis Activity	71
2.10.4	Antimalarial Activity	72
2.11	Structure-Activity Relationship (SAR)	73
2.12	Conclusion	74
	References	75

3	Green synthesis and pharmacological screening of polyhydroquinoline derivatives bearing a fluorinated 5-aryloxy pyrazole nucleus	
3.1	Preamble	80
3.2	Synthesis of Polyhydroquinoline	80
3.3	Biological Screening	82
3.4	Present Work	85
3.5	Reaction Scheme	88
3.6	Reaction Mechanism	89
3.7	Experimental	90
3.8	Synthesis of Polyhydroquinoline Derivatives Bearing Fluorinated 5-aryloxy pyrazole Nucleus	90
3.9	Optimization of Reaction Conditions For The Target Compounds	93
3.10	Preliminary and Spectral Characterization	94
3.11	Biological Results	107
3.11.1	Antibacterial Activity	107
3.11.2	Antifungal Activity	109
3.11.3	Antituberculosis Activity	109
3.11.4	Antimalarial Activity	110
3.11.5	Cytotoxicity	111
3.12	Structure-Activity Relationship (SAR)	111
3.13	Conclusion	113
	References	114
4	Synthesis of fluoro substituted novel pyrazole nucleus clubbed with 1,3,4-oxadiazole scaffolds and their biological applications	
4.1	Preamble	118
4.2	1,3,4-Oxadiazole	118
4.3	Reported Method For Synthesis of 1,3,4-oxadiazoles	119
4.4	Biological Screening	120
4.5	Present Work	124
4.6	Reaction Scheme	125
4.7	Experimental	126
4.8	Synthesis Fluoro Substituted Novel Pyrazole Nucleus Clubbed with 1,3,4-oxadiazole derivatives	127
4.9	Preliminary and Spectral Characterization	129
4.10	Biological Results	142
4.10.1	Antibacterial Activity	142
4.10.2	Antifungal Activity	144
4.10.3	Antituberculosis Activity	144
4.10.4	Antimalarial Activity	145
4.11	Conclusion	146
	References	147

5	Novel morpholinoquinoline nucleus clubbed with pyrazoline scaffolds: Synthesis, antibacterial, antitubercular and antimalarial activities	
5.1	Preamble	151
5.2	Synthesis of Quinoline Based Pyrazoline Scaffolds	151
5.3	Biological Screening	153
5.4	Present Work	155
5.5	Reaction Scheme	156
5.6	Experimental	157
5.7	Synthesis of Novel Morpholinoquinoline Nucleus Clubbed with Pyrazoline Scaffolds	158
5.8	Preliminary and Spectral Characterization	160
5.9	Biological Results	175
5.9.1	Antibacterial Activity	175
5.9.2	Antifungal Activity	177
5.9.3	Antituberculosis Activity	178
5.9.4	Antimalarial Activity	179
5.9.5	Cytotoxicity	180
5.10	Structure-Activity Relationship (SAR)	180
5.11	Conclusion	182
	References	184
6	Design, synthesis and in vitro cytotoxicity evaluation of novel 2-morpholinoquinoline based 1,2,4-oxadiazole hybrids as potential antibacterial and antifungal agents	
6.1	Preamble	187
6.2	1,2,4-oxadiazole	187
6.3	Synthetic methodologies for 1,2,4-oxadiazole	187
6.4	Biological application of 1,2,4-oxadiazole derivatives	189
6.5	Present Work	194
6.6	Reaction Scheme	195
6.7	Reaction Mechanism	197
6.8	Experimental	197
6.9	Synthesis of 2-morpholinoquinoline integrated 1,2,4-oxadiazole scaffolds	198
6.10	Preliminary and Spectral Characterization	199
6.11	Biological Results	212
6.11.1	Antibacterial Activity	212
6.11.2	Antifungal Activity	214
6.11.3	Cytotoxicity	214
6.11.4	Effect of compounds on the integrity of DNA of <i>s. pombe</i> cells	215
6.11.5	In silico pharmacokinetic evaluation	216
6.11.6	In silico molecular docking study	218

6.12	Structure-Activity Relationship (SAR)	226
6.13	Conclusion	227
	References	229

Summary
List of publications
Conferences / Seminars / Workshops
