

Index

Sr. No.	Title	Page No.
Chapter 1	Introduction	1-32
	1.1 General Introduction	1
	1.2 History of heterocyclic compounds and their use as therapeutics	1
	1.3 History of Quinine, its discovery and use	4
	1.4 quinuclidine	5
	1.4 .1 Palonosetron	5
	1.4.2 Solifenacin	7
	1.4.3 Cevimeline	8
	1.5 Quinuclidinone and its use in different disease	9
	1.5.1 Use of Quinuclidinone derivatives in muscarinic receptor activity	9
	1.5.2 Use of Quinuclidinone Irritable bowel syndrome (IBS)	11
	1.5.3 Use of Quinuclidinone as diuretic agents	11
	1.5.4 Use of quinuclidinone in potent anti-histaminic and anti-depressant	12
	1.5.5 Use of Quinuclidinone in potent $\alpha 7$ nicotinic receptor	12
	1.5.6 Use of Quinuclidinone as anti-inflammatory agent	15
	1.5.7 Use of Quinuclidinone as anti-arrhythmic agent	15
	1.5.8 Use of Quinuclidinone as anticancer agents	16
	1.5.9 Use of Quinuclidinone as 5-HT inhibitor	21
	1.6 Quinuclidinone based catalysis	22
	1.6.1 Baylis-Hillman reaction	22
	1.6.2 Morita-Baylis-Hillman reaction	23
	1.6.3 Use of Quinuclidinone in asymmetric Henry reaction	25

Sr. No.	Title	Page No.
	1.7 Conclusion	25
	Reference	26
Chapter 2	A facile route to synthesis of 3-quinuclidinone hydrochloride	33-47
	2.1 Introduction	33
	2.2 Result and Discussion	34
	2.3 Experimental details	43
	2.4 Conclusion	45
	Reference	46
Chapter 3	Anti-cancer application of Quinuclidinone derivative	48-60
	3.1 General Introduction	48
	3.1.1 Epidemiology	48
	3.1.2 Causes of Cancer	49
	3.1.3 Initiation, Promotion and Progression of Cancer	50
	3.1.4 Chemical carcinogenesis	51
	3.1.5 Radiation	51
	3.1.6 Carcinogenesis Pathway	52
	3.1.6.1 Virus	52
	3.2 Treatment of Cancer	53
	3.2.1 Surgery	53
	3.2.2 Anti metabolite	54
	3.2.3 Pyrimidine analogues	54
	3.2.4 Folate analogues	54
	3.2.5 Purine analogues	55

Sr. No.	Title	Page No.
	3.3 Antitubulin Agents	55
	Reference	57
3A	Synthesis characterization and cytotoxicity evaluation of 2-arylidine quinuclidinones	61-100
	3A.1 Introduction	61
	3A.2 Result and discussion	61
	3A.2.1 Chemistry	61
	3A.2 Biological activity	89
	3A.2.1 Structure Activity Relationship (SAR)	91
	3A.3.Experimental	91
	3A.3.1 Chemistry	91
	3A.3.2 Biological assay	98
	3A.3.2.1 Cell line and culture	98
	3A.3.2.2 Cell viability assay	98
	3A.4 Conclusion	99
	Reference	100
3B	Synthesis, characterization and evaluation of (Z)-4-((3-Oxoquinuclidin-2-ylidine)methyl) benzoic acid derivatives as anti-proliferative agents	101-166
	3B.1 Introduction	101
	3B.2 Result and discussion	101
	3B.2.1 Chemistry	101
	3B.2.2 Biological assay and Structure Activity Relationship (SAR)	149
	3B.3 Experimental	153
	3B.3.1 Material and methods	153
	3B.3.1.1 Chemistry	153

Sr. No.	Title	Page No.
	3B.3.1.2 Biology	160
	3B.3.1.2.1 Cell line and culture	160
	3B.3.1.2.2 Cell viability assay	161
	3B.3.1.2.3 Nuclear morphology assessment (DAPI staining)	162
	3B.3.1.2.4 Assessment of apoptosis AO/EtBr staining	162
	3B.3.1.2.5 Haemolytic assay	163
	3B.3.1.2.6. DNA ladder assay	163
	3B.4 Conclusions	163
	Reference	165
4	Synthesis and pharmacological evaluation of new pyrazolyl piperidine derivative effective as antiplatelet agents	167-211
	4.1 Introduction	167
	4.1.1 Platelet activation mechanism	170
	4.1.2 Hemostasis	171
	4.1.3 Platelet activation	172
	4.1.4 Coagulation cascade	173
	4.2 Result and discussion	174
	4.2.1 Chemistry	174
	4.2.2 Biological evolution	197
	4.3 Experimental	200
	4.3.1 Chemistry	200
	4.3.2 Biology	208
	4.4 Conclusion	208
	Reference	209