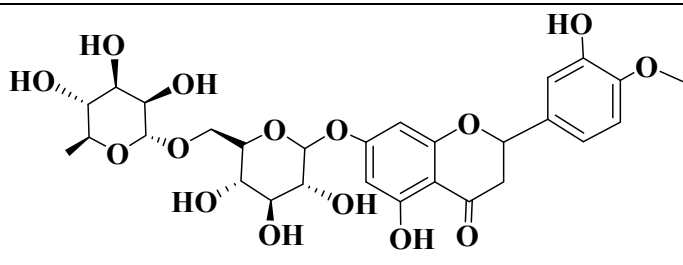
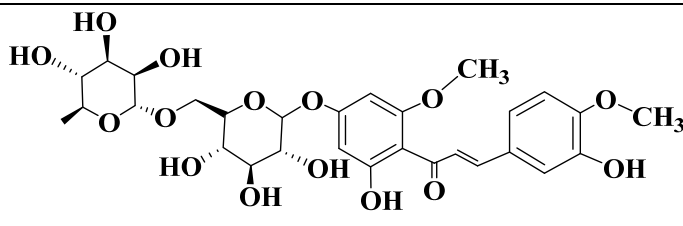
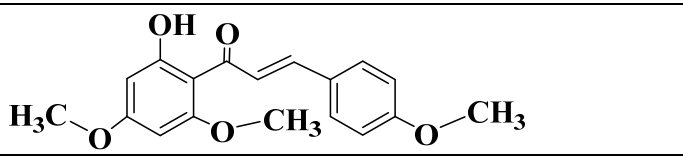
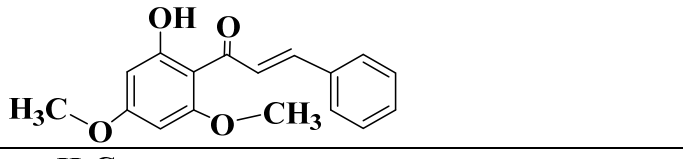
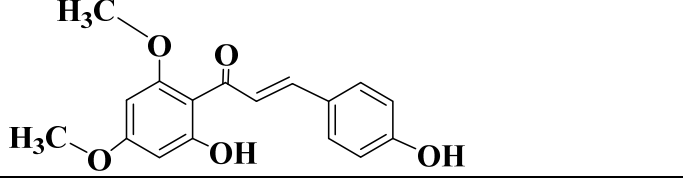
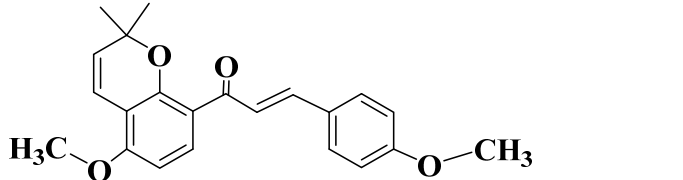
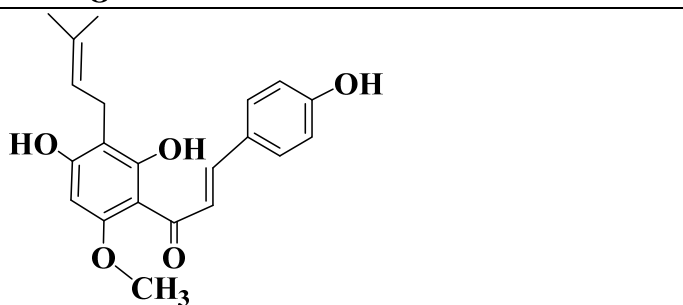
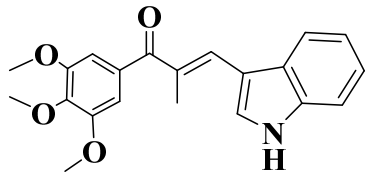
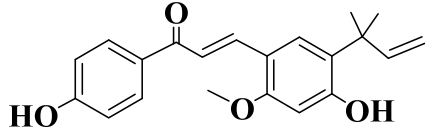
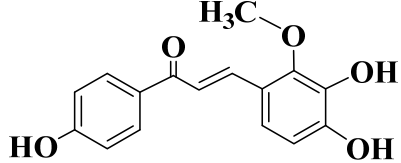
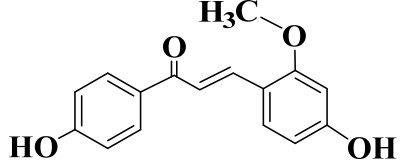
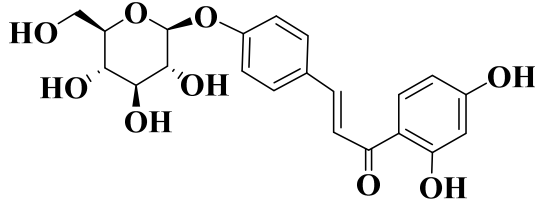
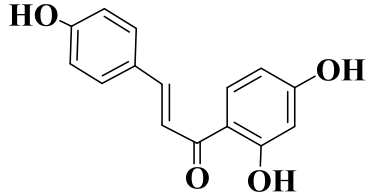
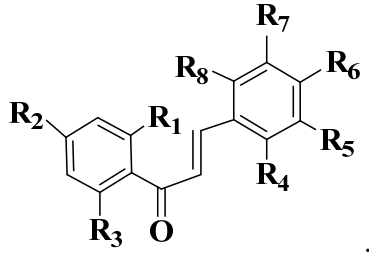
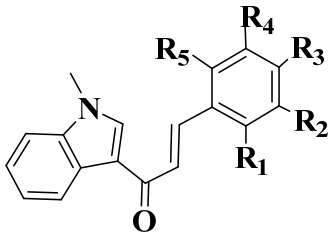
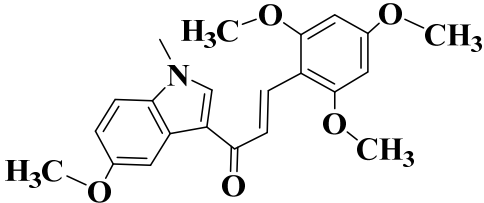
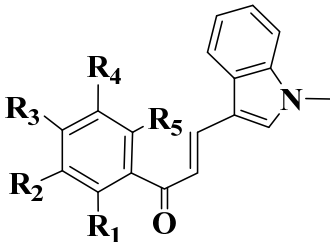
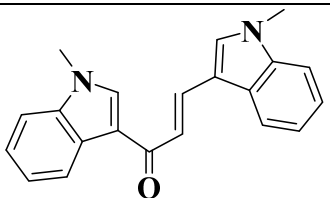
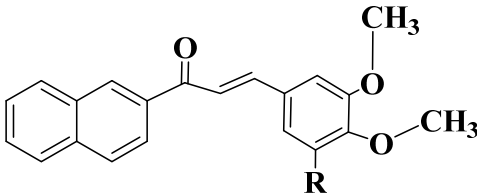
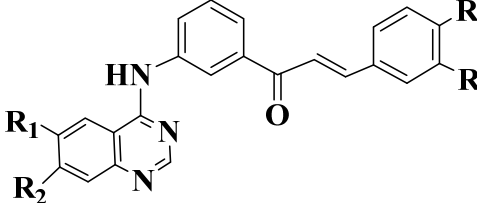
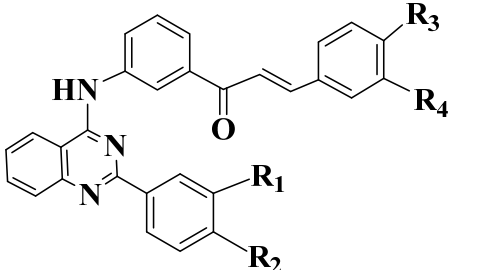
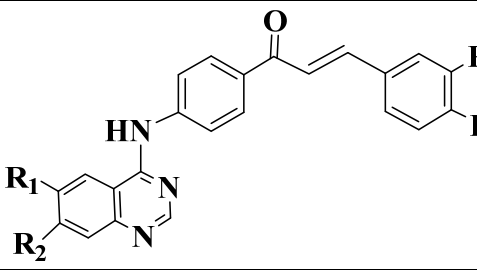
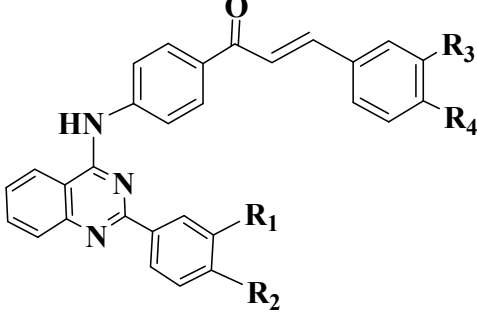
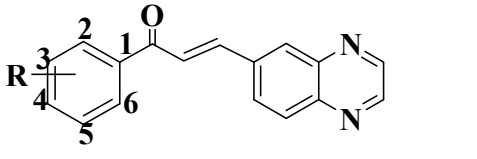
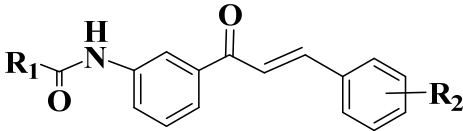
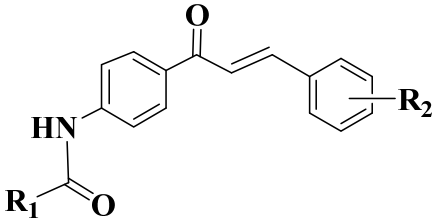
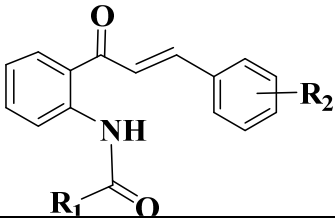


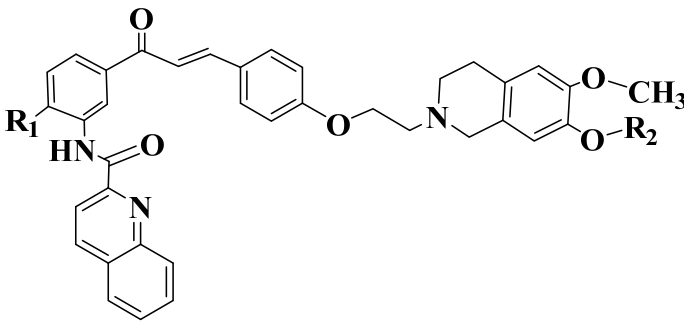
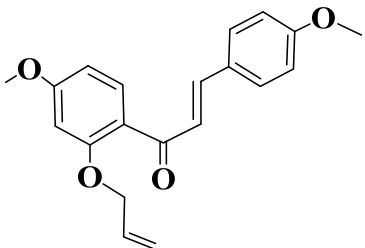
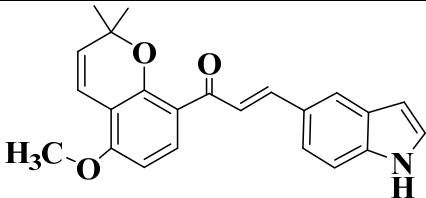
Table S1. Chemical structures of flavonoids		
	Structure	Name
1		Hesperidin
2		Hesperidin methyl chalcone
3		Flavokawain A
4		Flavokawain B
5		Flavokawain C
6		Millepachine
7		Xanthohumol

8		
9		Licochalcone A
10		Licochalcone B
11		Echinatin
12		Isoliquiritin
13		Isoliquiritigenin
14-57		14. R <sub>1</sub> , R <sub>3</sub> =OMe
		15. R <sub>1</sub> , R <sub>3</sub> , R <sub>4</sub> =OMe
		16. R <sub>1</sub> , R <sub>3</sub> , R <sub>5</sub> =OMe
		17. R <sub>1</sub> , R <sub>3</sub> , R <sub>8</sub> =OMe
		18. R <sub>1</sub> , R <sub>3</sub> , R <sub>4</sub> , R <sub>6</sub> , R <sub>8</sub> =OMe
		19. R <sub>1</sub> , R <sub>3</sub> , R <sub>6</sub> , R <sub>7</sub> , R <sub>8</sub> =OMe
		20. R <sub>1</sub> , R <sub>3</sub> , R <sub>5</sub> , R <sub>6</sub> , R <sub>8</sub> =OMe
		21. R <sub>1</sub> , R <sub>3</sub> , R <sub>5</sub> , R <sub>6</sub> , R <sub>7</sub> =OMe
		22. R <sub>1</sub> , R <sub>3</sub> =OEt, R <sub>4</sub> , R <sub>6</sub> , R <sub>8</sub> =OMe
		23. R <sub>1</sub> , R <sub>3</sub> =OEt, R <sub>4</sub> , R <sub>8</sub> =OMe
		24. R <sub>1</sub> , R <sub>3</sub> =OEt, R <sub>4</sub> , R <sub>6</sub> =OMe
		25. R <sub>1</sub> , R <sub>2</sub> , R <sub>6</sub> , R <sub>8</sub> =OMe
		26. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> , R <sub>6</sub> , R <sub>8</sub> =OMe
		27. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> , R <sub>6</sub> =OMe
		28. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> , R <sub>8</sub> =OMe
		29. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> , R <sub>8</sub> =OEt

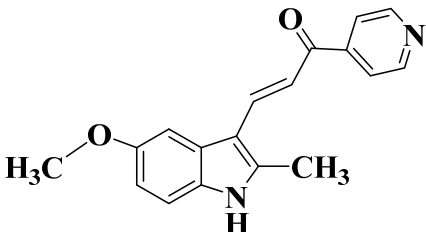
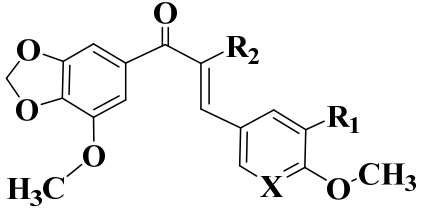
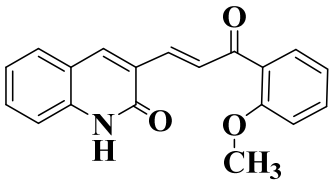
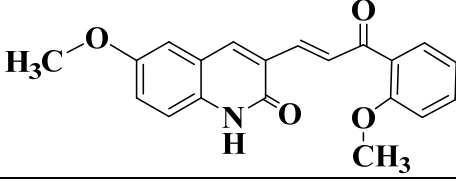
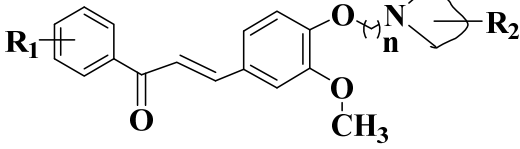
		30. R <sub>4</sub> , R <sub>8</sub> =OMe
		31. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>5</sub> , R <sub>7</sub> =OMe
		32. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>6</sub> , R <sub>7</sub> ,R <sub>8</sub> =OMe
		33. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>6</sub> , R <sub>7</sub> =OMe
		34. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>4</sub> ,R <sub>6</sub> , R <sub>8</sub> =OMe
		35. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>7</sub> , R <sub>8</sub> =OMe
		36. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>5</sub> , R <sub>8</sub> =OMe
		37. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>5</sub> ,R <sub>6</sub> , R <sub>7</sub> =OMe
		38. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>4</sub> , R <sub>8</sub> =OMe
		39. R <sub>1</sub> =OH, R <sub>2</sub> , R <sub>6</sub> , R <sub>8</sub> =OMe
		40. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> , R <sub>8</sub> =OMe
		41. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> , R <sub>5</sub> , R <sub>7</sub> =OMe
		42. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> =OMe
		43. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> =OMe
		44. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> , R <sub>5</sub> =OMe
		45. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> , R <sub>6</sub> =OMe
		46. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> , R <sub>5</sub> , R <sub>6</sub> , R <sub>7</sub> =OMe
		47. R <sub>3</sub> =OH, R <sub>1</sub> , R <sub>2</sub> , R <sub>6</sub> , R <sub>7</sub> , R <sub>8</sub> =OMe
		48. R <sub>1</sub> ,R <sub>3</sub> =OMe
		49. R <sub>2</sub> ,R <sub>3</sub> ,R <sub>4</sub> =OMe
		50. R <sub>1</sub> ,R <sub>3</sub> ,R <sub>5</sub> =OMe
		51. R <sub>1</sub> ,R <sub>5</sub> =OMe
		52
		53. R <sub>1</sub> ,R <sub>3</sub> =OMe
		54. R <sub>3</sub> =OMe
		55. R <sub>1</sub> ,R <sub>3</sub> ,R <sub>5</sub> =OMe
		56. R <sub>1</sub> , R <sub>5</sub> =OMe
		57.

58-61		58. R=Cl
		59. R=Br
		60. R=I
		61. R=OMe
62-83		62. R <sub>1</sub> , R <sub>2</sub> =H; R <sub>3</sub> , R <sub>4</sub> =OMe
		63. R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> =H; R <sub>3</sub> =OMe
		64. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> =OMe
		65. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> =OMe; R <sub>4</sub> =H
		66. R <sub>1</sub> , R <sub>2</sub> =H; R <sub>3</sub> , R <sub>4</sub> =OMe
		67. R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> =H; R <sub>3</sub> =OMe
		68. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> =H; R <sub>4</sub> =OMe
		69. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> =OMe
		70. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> =OMe; R <sub>4</sub> =H
		71. R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> =OMe; R <sub>3</sub> =H
		72. R <sub>1</sub> , R <sub>2</sub> =H; R <sub>3</sub> , R <sub>4</sub> =OMe
		73. R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> =H; R <sub>3</sub> =OMe
		74. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> =OMe
		75. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> =OMe; R <sub>4</sub> =H
		76. R <sub>1</sub> , R <sub>2</sub> =H; R <sub>3</sub> , R <sub>4</sub> =OMe
		77. R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> =H; R <sub>3</sub> =OMe
		78. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> =H; R <sub>4</sub> =OMe
		79. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> =H
		80. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> , R <sub>4</sub> =OMe
		81. R <sub>1</sub> , R <sub>2</sub> , R <sub>3</sub> =OMe; R <sub>4</sub> =H
		82. R <sub>1</sub> , R <sub>2</sub> , R <sub>4</sub> =OMe; R <sub>3</sub> =H
		83. R <sub>1</sub> , R <sub>2</sub> =OMe; R <sub>3</sub> , R <sub>4</sub> =H
84-95		84. R=4-OMe
		85. R=2,5-diOMe
		86. R=3,4-diOMe
		87. R=2,4-diOMe
		88. R=3,4,5-triOMe
		89. R=3-OMe, 4-OH
		90. R=2,4,5-triOMe
		91. R=3,5-diOMe
		92. R=2-OMe

		93. R=3,5-diOMe, 4-OH
		94. R=3-OMe
		95. R=2,3,4-triOMe
		96. R <sub>1</sub> =Ph, R <sub>2</sub> =3,4-diOMe
96-131		97. R <sub>1</sub> =4-O <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		98. R <sub>1</sub> =3-BrC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		99. R <sub>1</sub> =Ph, R <sub>2</sub> =3,4-diOMe
		100. R <sub>1</sub> =2-O <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		101. R <sub>1</sub> =3-O <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		102. R <sub>1</sub> =4-O <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		103. R <sub>1</sub> =3-BrC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		104. R <sub>1</sub> =4-BrC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		105. R <sub>1</sub> =3-ClC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		106. R <sub>1</sub> =4-ClC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		107. R <sub>1</sub> =3,4-diClC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		108. R <sub>1</sub> =2-FC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		109. R <sub>1</sub> =4-NCC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		110. R <sub>1</sub> =4-F <sub>3</sub> CC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		111. R <sub>1</sub> =2-MeOC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		112. R <sub>1</sub> =3-MeOC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		112. R <sub>1</sub> =4-MeOC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		114. R <sub>1</sub> =3,4-diMeOC <sub>6</sub> H <sub>3</sub> , R <sub>2</sub> =3,4-diOMe
		115. R <sub>1</sub> =3,4,5-triMeOC <sub>6</sub> H <sub>2</sub> , R <sub>2</sub> =3,4-diOMe
		116. R <sub>1</sub> =Ph, R <sub>2</sub> =3,4-diOMe
		117. R <sub>1</sub> =3-ClC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		118. R <sub>1</sub> =4-ClC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		119. R <sub>1</sub> =2-O <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-

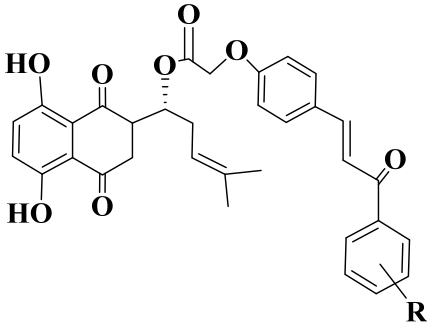
		diOMe
		120. R <sub>1</sub> =3-O <sub>2</sub> NC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		121. R <sub>1</sub> =2-MeOC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		122. R <sub>1</sub> =3-MeOC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3,4-diOMe
		123. R <sub>1</sub> =3-quinalinyl, R <sub>2</sub> =3,4-diOMe
		124. R <sub>1</sub> =1-naphtyl, R <sub>2</sub> =3,4-diOMe
		125. R <sub>1</sub> =3-pyridil, R <sub>2</sub> =3,4-diOMe
		126. R <sub>1</sub> =7-methoxy-2-oxo-3-chromenyl, R <sub>2</sub> =3,4-diOMe
		127. R <sub>1</sub> =2-thienyl, R <sub>2</sub> =3,4-diOMe
		128. R <sub>1</sub> =3-ClC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3-Cl
		129. R <sub>1</sub> =3,4-diMeOC <sub>6</sub> H <sub>3</sub> , R <sub>2</sub> =3-Cl
		130. R <sub>1</sub> =2-thienyl, R <sub>2</sub> =3-OMe, 4-F
		131. R <sub>1</sub> =3-ClC <sub>6</sub> H <sub>4</sub> , R <sub>2</sub> =3-OMe, 4-F
132 - 137		132. R <sub>1</sub> =H, R <sub>2</sub> =OMe
		133. R <sub>1</sub> =H, R <sub>2</sub> =-CH <sub>2</sub> -CH <sub>2</sub> -OCH <sub>3</sub> ;
		134. R <sub>1</sub> =H, R <sub>2</sub> =(CH <sub>2</sub> -CH <sub>2</sub> -O) <sub>3</sub> CH <sub>3</sub>
		135. R <sub>1</sub> =Me, R <sub>2</sub> =OMe;
		136. R <sub>1</sub> =Me, R <sub>2</sub> =-CH <sub>2</sub> -CH <sub>2</sub> -OCH <sub>3</sub>
		137. R <sub>1</sub> =Me, R <sub>2</sub> : (CH <sub>2</sub> -CH <sub>2</sub> -O) <sub>3</sub> CH <sub>3</sub>
138		138
139		

140		
141		
142 - 161		142.Ar=3-hydroxy-4-methoxyphenyl 143.Ar=4-bromophenyl 144.Ar=2,3,4-trimethoxyphenyl 145.Ar=2-bromophenyl 146.Ar=naphthalen-1-yl 147. Ar=naphthalen-2-yl 148.Ar=3-bromo-4-methoxyphenyl 149.Ar=3-methoxyphenyl 150.Ar=4-methoxy-3-nitrophenyl 151.Ar=thiophen-2-yl 152.Ar=4-chlorophenyl 153.Ar=2,4,5-trimethoxyphenyl 154.Ar=2-fluorophenyl 155.Ar=phenyl 156.Ar=3-fluorophenyl 157.Ar=3,4,5-trimethoxyphenyl 158.Ar=2-methoxyphenyl 159.Ar=4-(dimethylamino)phenyl 160.Ar=4-(diethylamino)phenyl 161.Ar=3-amino-4-methoxyphenyl
162 - 177		162.Ar=4-chlorophenyl 163.Ar=4-methoxyphenyl 164.Ar=4-(diethylamino)phenyl 165. Ar=4-(dimethylamino)phenyl 166. Ar=3,4,5-trimethoxyphenyl 167.Ar=phenyl

		168.Ar=2-fluorophenyl
		169.Ar=naphtalen-1-yl
		170.Ar=4-bromophenyl
		171. Ar=4-fluorophenyl
		172. Ar=3-fluorophenyl
		173. Ar=2,3,4-trimethoxyphenyl
		174.Ar=4-methoxy-3-nitrophenyl
		175.Ar= naphtalen-2-yl
		176.Ar=3-chlorophenyl
		177.Ar=3-amino-4-methoxyphenyl
178		178
179 - 187		179.R1=OH, R2=H, X=C
		180.R1=F, R2=H, X=C
		181.R1=H, R2=H, X=N
		182.R1=NO2, R2=H, X=C
		183.R1=NH2, R2=H, X=C
		184.R1=OH, R2=CH3, X=C
		185.R1=NH2, R2=CH3, X=C
		186.R1=NH-Ser, R2=CH3, X=C
		187.R1=NH-Pro-Lys, R2=CH3, X=C
188		
189		
190 - 214		190.R1=4-OMe, n=3, R2=piperidinyl
		191. R1=2-OH, n=3, R2=piperidinyl
		192. R1=4-Br, n=3, R2=piperidinyl
		193. R1=H, n=4, R2=piperidinyl



		194. R <sub>1</sub> =4-Br, n=4, R <sub>2</sub> =piperidinyl
		195. R <sub>1</sub> =4-Cl, n=4, R <sub>2</sub> =piperidinyl
		196. R <sub>1</sub> =2,4-diCl, n=4, R <sub>2</sub> =piperidinyl
		197. R <sub>1</sub> =4-OMe, n=2, R <sub>2</sub> =morpholinyl
		198. R <sub>1</sub> =2-Br, n=2, R <sub>2</sub> =morpholinyl
		199. R <sub>1</sub> =2,4-diCl, n=2, R <sub>2</sub> =morpholinyl
		200. R <sub>1</sub> =4-CF <sub>3</sub> , n=2, R <sub>2</sub> =morpholinyl
		201. R <sub>1</sub> =4-OMe, n=3, R <sub>2</sub> =morpholinyl
		202. R <sub>1</sub> =4-OMe, n=3, R <sub>2</sub> =2,6- diOMe morpholinyl
		203. R <sub>1</sub> =2-OMe, n=3, R <sub>2</sub> =2,6- diOMe morpholinyl
		204. R <sub>1</sub> =2,4-diCl, n=3, R <sub>2</sub> =2,6- diOMe morpholinyl
		205. R <sub>1</sub> =4-Me, n=3, R <sub>2</sub> =2,6- diOMe morpholinyl
		206. R <sub>1</sub> =4-OMe, n=3, R <sub>2</sub> =indolinyl
		207. R <sub>1</sub> =2,4-diCl, n=3, R <sub>2</sub> =indolinyl
		208. R <sub>1</sub> =H, n=3, R <sub>2</sub> =1,2,3,4- tetrahydroquinolinyl
		209. R <sub>1</sub> =4-OMe, n=3, R <sub>2</sub> =1,2,3,4- tetrahydroquinolinyl
		210. R <sub>1</sub> =4-Br, n=3, R <sub>2</sub> =1,2,3,4- tetrahydroquinolinyl
		211. R <sub>1</sub> =4-Cl, n=3, R <sub>2</sub> =1,2,3,4- tetrahydroquinolinyl
		212. R <sub>1</sub> =2,4-diCl, n=3, R <sub>2</sub> =1,2,3,4-tetrahydroquinolinyl
		213. R <sub>1</sub> =4-NH <sub>2</sub> , n=3, R <sub>2</sub> =1,2,3,4- tetrahydroquinolinyl
		214. R <sub>1</sub> =4-OMe, n=3, R <sub>2</sub> =3,5- diMe-1H-pyrazolyl

215 - 232		215.R=H
		216.R=4-OMe
		217.R=3,4,5-triOMe
		218.R=4-CF <sub>3</sub>
		219.R=2,3,4-triCl
		220.R=2- CF <sub>3</sub>
		221.R=2-OMe
		222.R=3- CF <sub>3</sub>
		223.R=4-Et
		224.R=2-F
		225.R=3,5-diCF <sub>3</sub>
		226.R=3-OCF <sub>3</sub>
		227.R=3-OMe
		228.R=2-Me
		229.R=2-Cl
		230.R=2-Br
		231.R=3-CH <sub>3</sub>
		232.R=4- CH <sub>3</sub>
233	