Table – 1 Some selected compounds of Coumarin with Pharmacological and Industrial properties

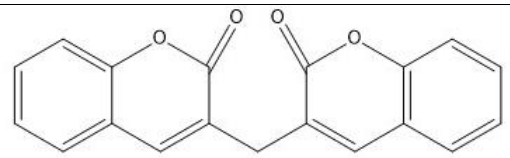
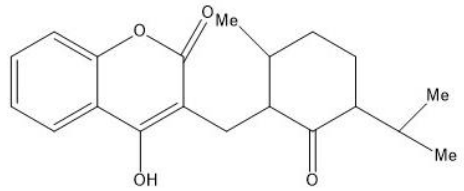
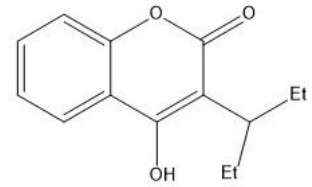
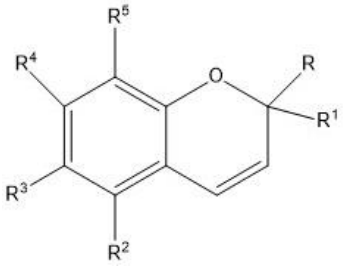
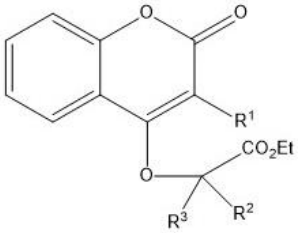
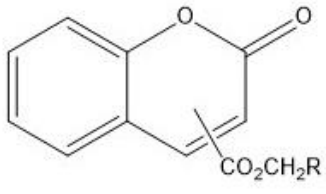
Substrates	Properties	Ref
	Anticoagulant	16,17
	Anticoagulant	16,17
	Hypo epidemic1	17
	Anti allergic	17a
	Anti inflammatory	18
	Anti hypertension	19

Table – 1 Some selected compounds of Coumarin with Pharmacological and Industrial properties

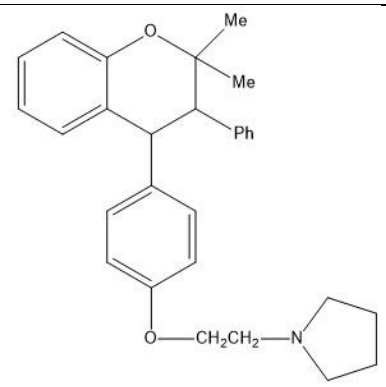
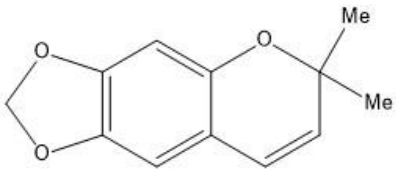
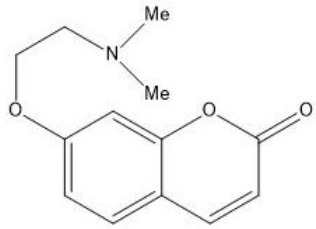
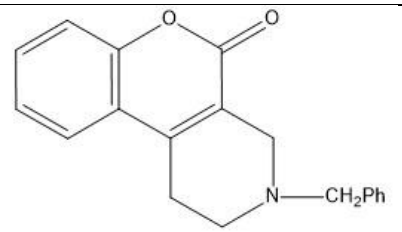
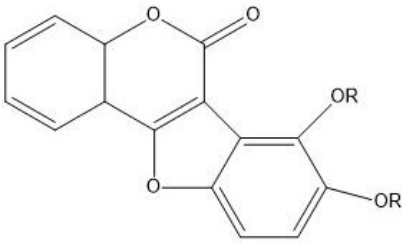
Substrates	Properties	Ref
	Anti inflammatory Schistomiacide	20 20
	Metamorphosis activity of insect	21
	Hypertensive	22
	Hypertensive	22
	Hypertensive	22

Table – 1 Some selected compounds of Coumarin with Pharmacological and Industrial properties

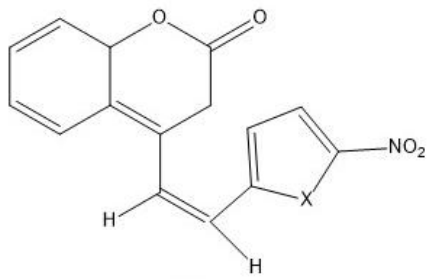
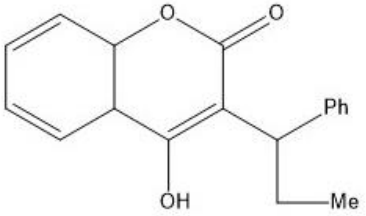
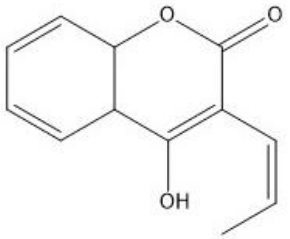
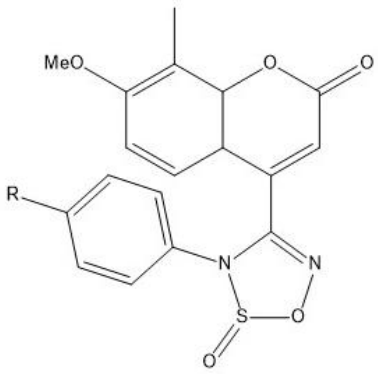
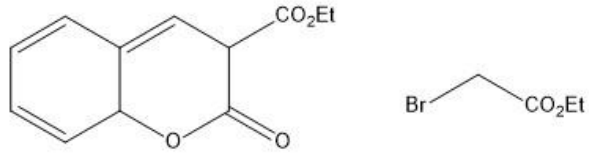
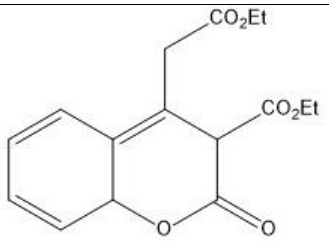
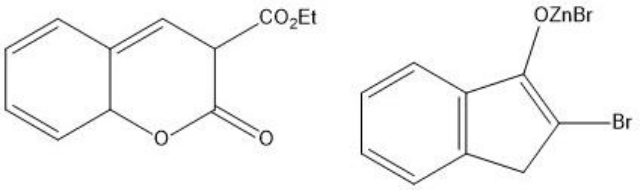
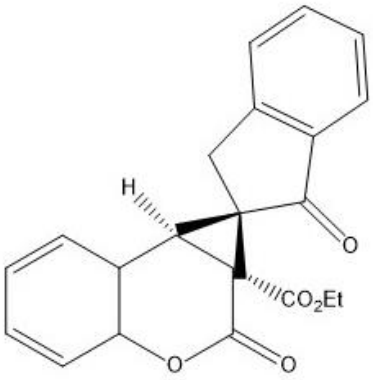
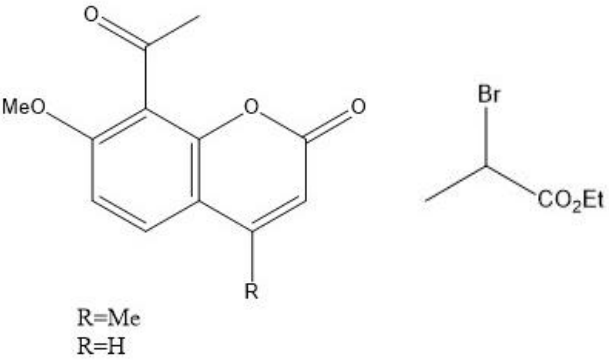
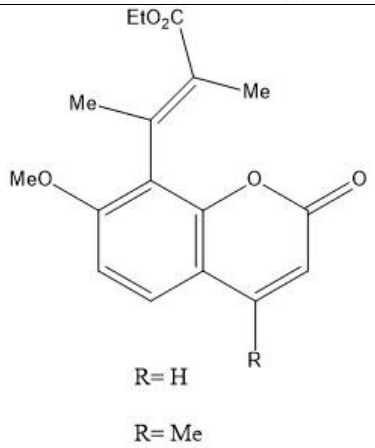
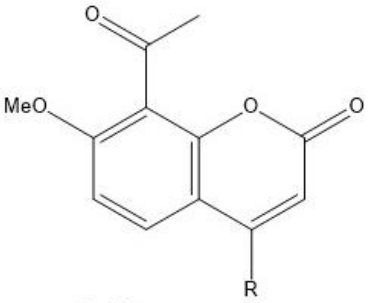
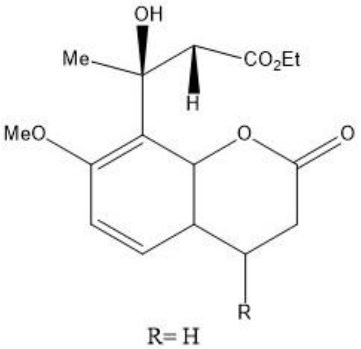
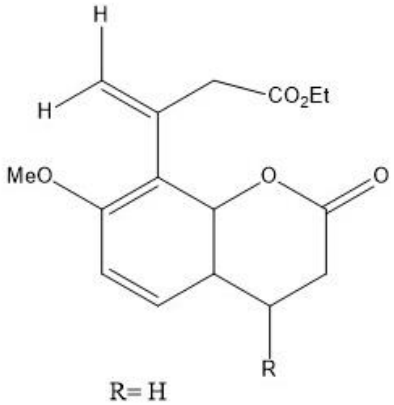
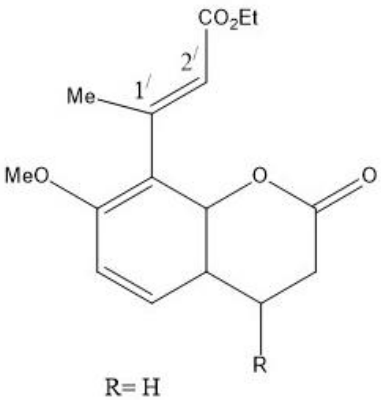
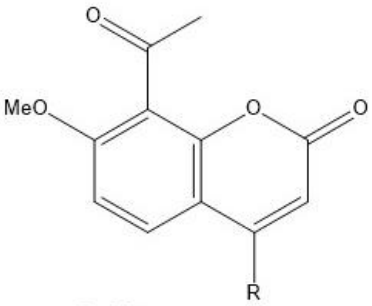
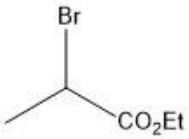
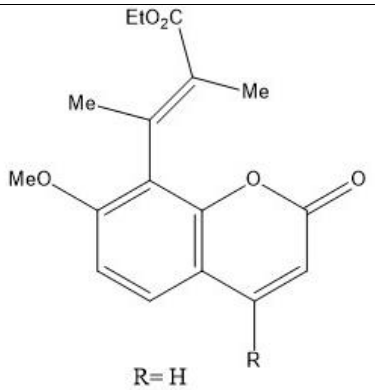
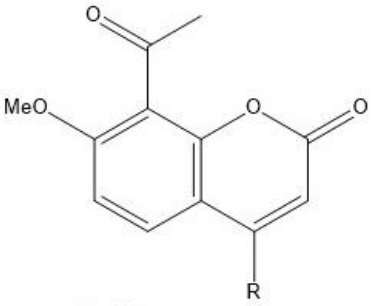
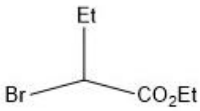
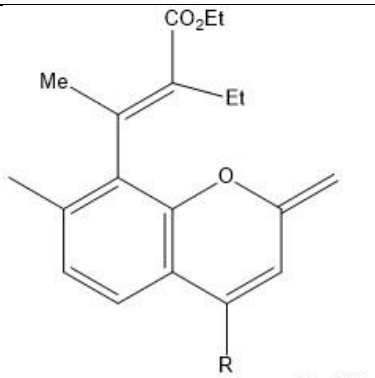
Substrates	Properties	Ref
 X= O or S	Anti tubercular	23
	Anti coagulant	23a
 	Anti inflammatory & Anti microbial	24,25

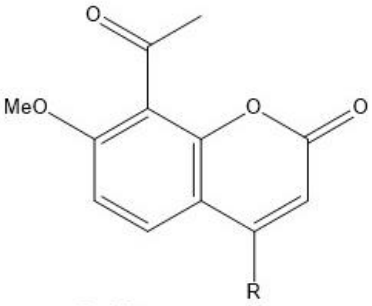
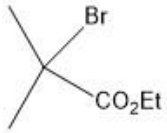
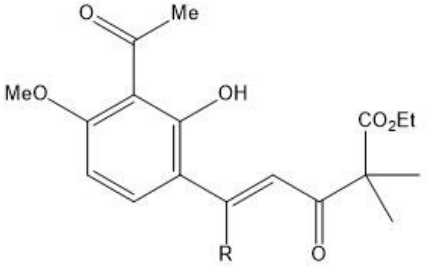
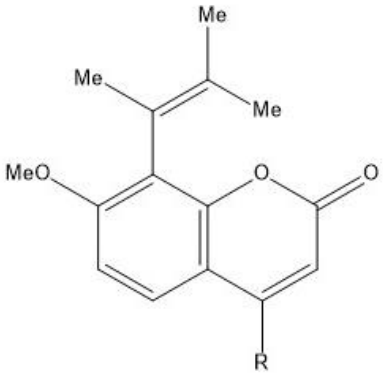
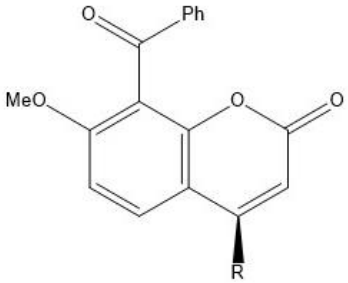
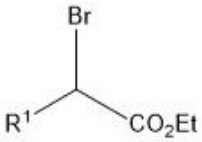
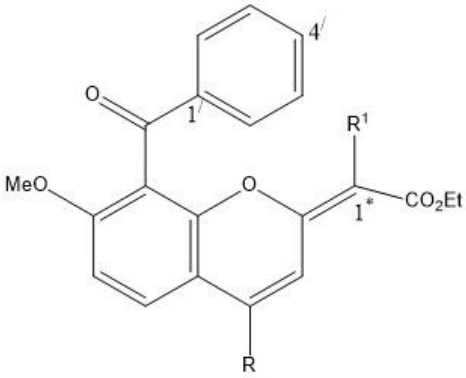
Table - 2 Selected Examples of Reformatsky Reaction with Coumarins/uncommon electrophiles

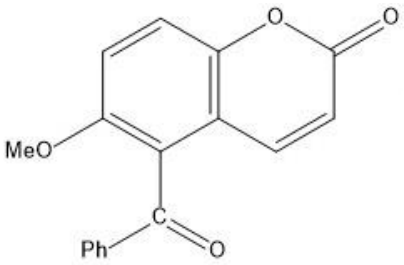
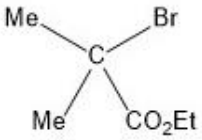
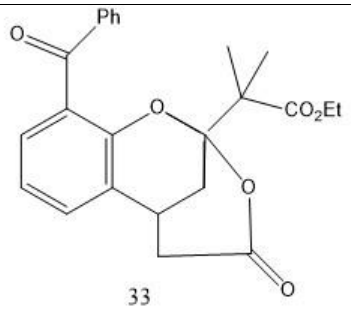
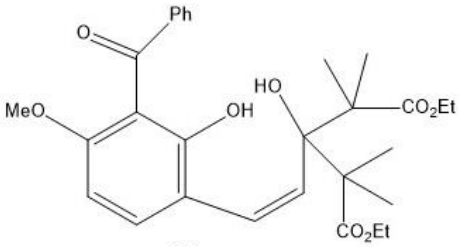
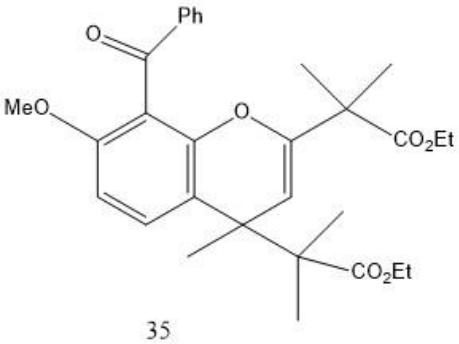
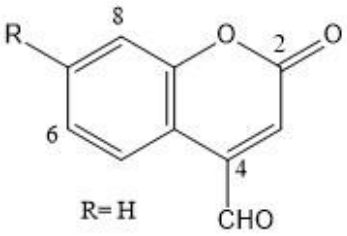
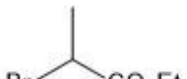
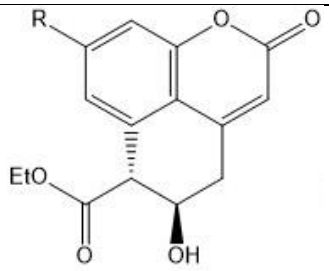
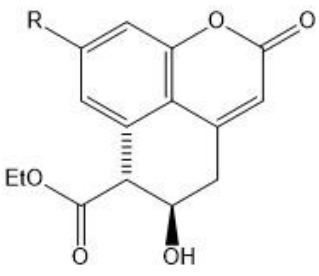
Substrates	Products	Ref
		63
		65
		66

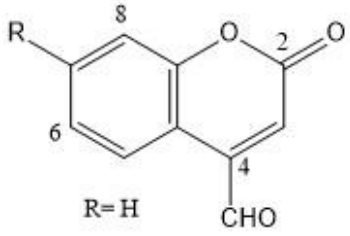
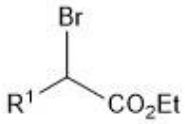
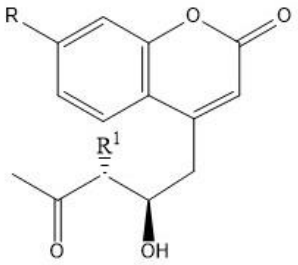
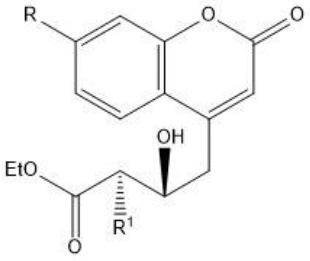
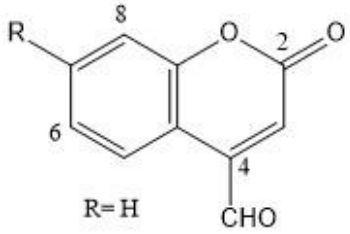
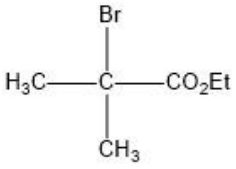
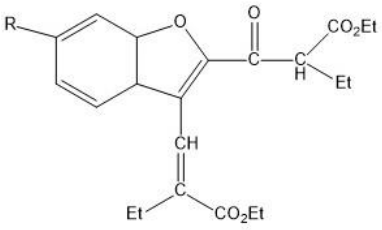
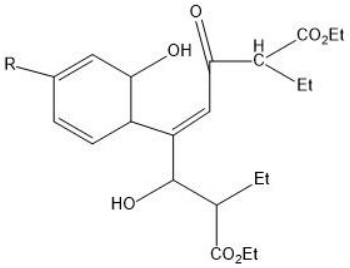
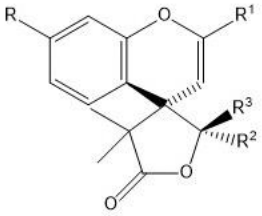
Table

 R=Me R=H 	 R= H R= Me  R= H R= Me  R= H R= Me	66

 R=Me R=H		 R= H R= Me	66
 R=Me R=H		 R= H R=Me	66

 R=Me R=H		 R=H  R=H R= Me	66
 R= H, Me		 R= H R^1= H R= Me R^1=H R=H R^1= Me R=Me R^1=Me R=H R^1= Et R= Me R^1= Et	66a

 	 33  34  35	66a
 R= H R= OMe 	 	67

Substrates	Products	Ref
 R= H R= OMe 	  R^1 = Me, Et, $CHMe_2CH$ R= H, Me	67
 R= H R= OMe 	   R=R^2=H, R^3=CMe_2CO_2Et R=R^3=H, R^2=CMe_2CO_2Et R=OMe, R^1=R^3=CMe_2CO_2Et, R_2=H	67

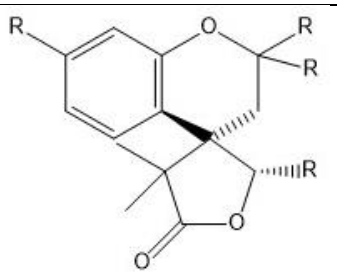
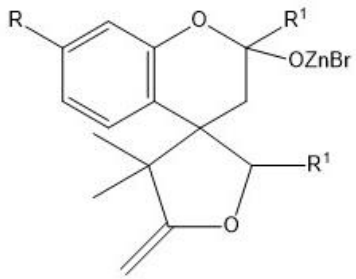
	 R=CMe_2CO_2Et  R=H, OMe, R^1=CMe_2CO_2Et	

Table -3 Selected Examples of Reformatsky Reaction with Coumarins/uncommon electrophiles

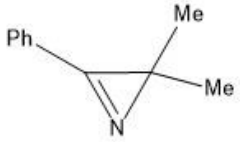
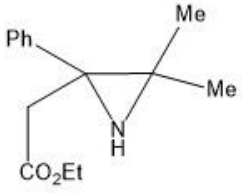
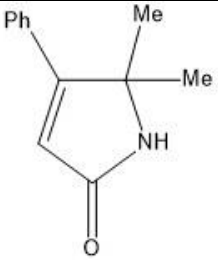
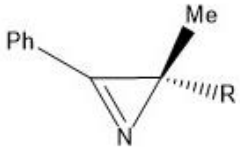
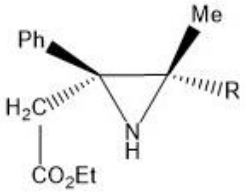
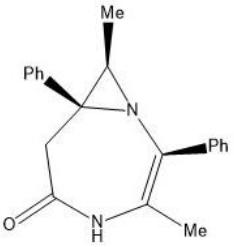
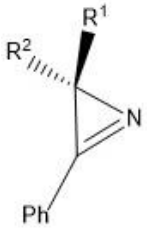
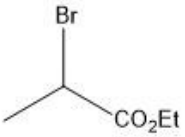
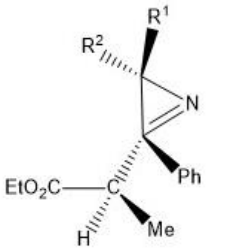
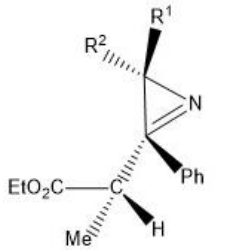
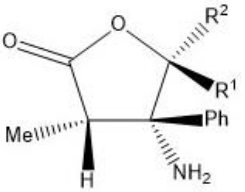
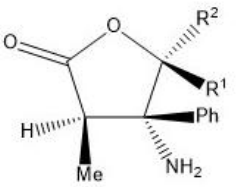
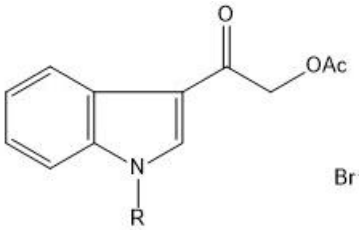
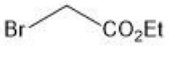
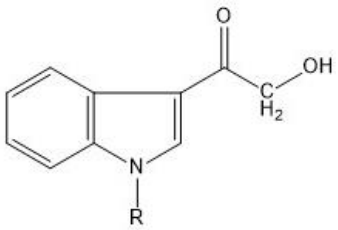
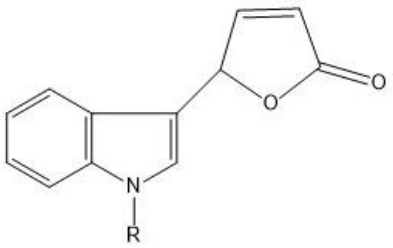
Substrates	Products	Ref
 	 	69
 	 	69
 	   	70
 	 	71

Table -3 Selected Examples of Reformatsky Reaction with Coumarins/uncommon electrophiles

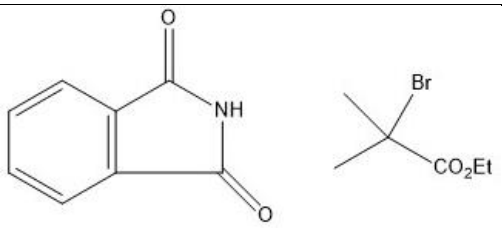
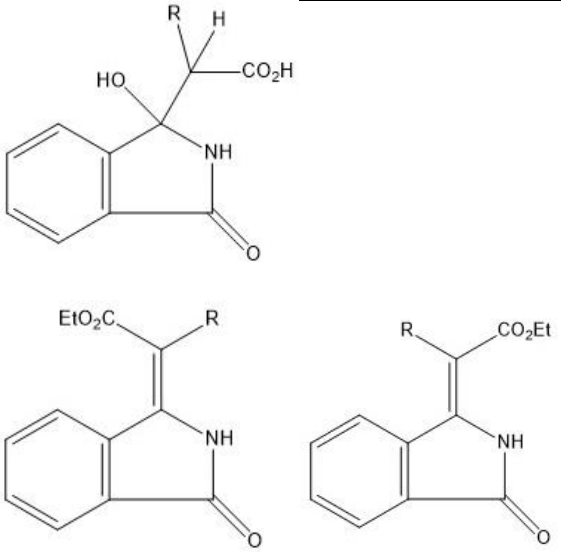
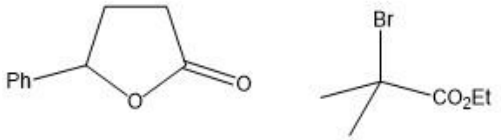
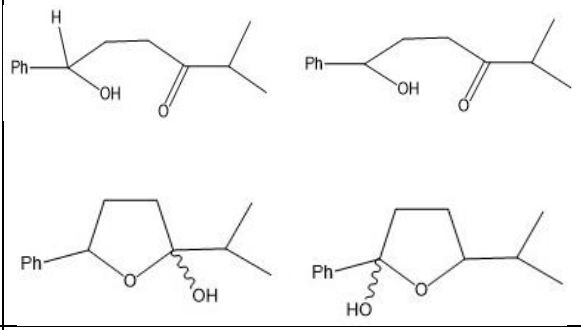
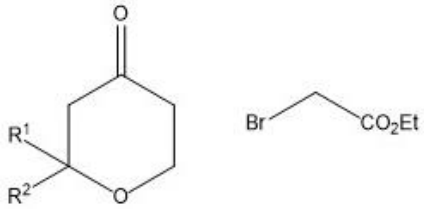
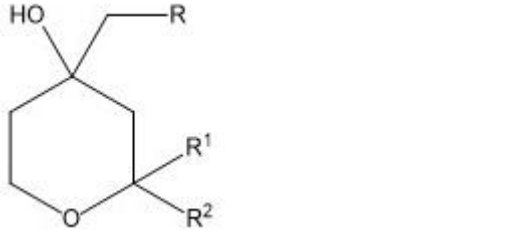
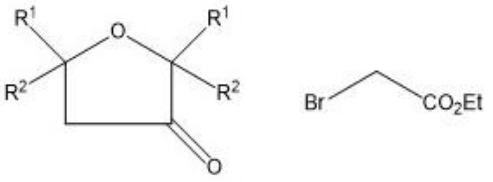
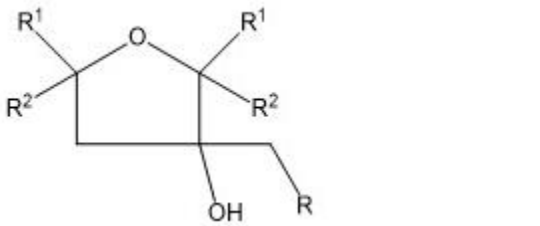
Substrates	Products	Ref
		77
		72
		73
		73

Table -3 Selected Examples of Reformatsky Reaction with Coumarins/uncommon electrophiles

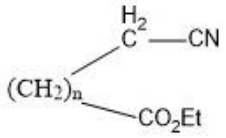
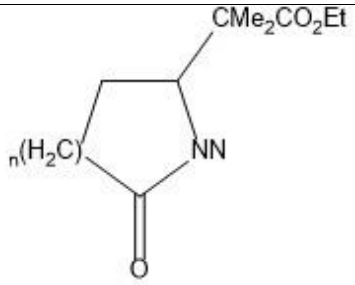
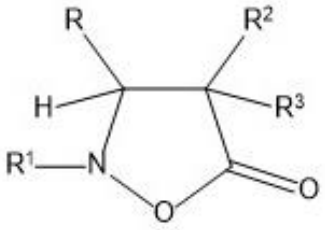
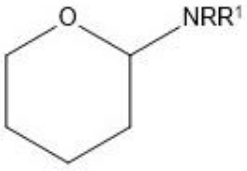
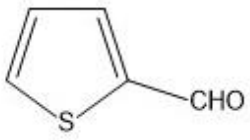
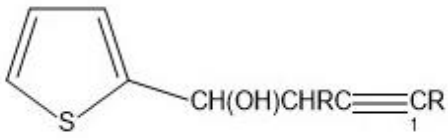
Substrates	Products	Ref
 $RCH=N(O)R^{/}$ $R^2CR^3BrCO_2R^4$		74
	 R= Me. $R^{/}$ = p-OMe-C_6H_4 or, R= Me, Et, $CHMe_2$, $CHPh_2$, $R^{/}$= Ph R^2= R^3= H, R^4=Et/, CMe ; R^2=R^3= Me, R^4=Et	75
 $BrCR^2R^3CN/Zn$	$OH\text{-}(CH_2)_4CH(NRR^1)CR^2R^3CN$ R= Me. $R^{/}$ = p-OMe-C_6H_4 or, R= Me, Et, $CHMe_2$, $CHPh_2$, $R^{/}$= Ph R^2= R^3= H, R^4=Et/, CMe ; R^2=R^3= Me, R^4=Et	75
 $RCHBrC=CR^1$	 R= Me. $R^{/}$ = p-OMe-C_6H_4 or, R= Me, Et, $CHMe_2$, $CHPh_2$, $R^{/}$= Ph	75

Table -4 Selected Examples of Grignard Reaction with Coumarins

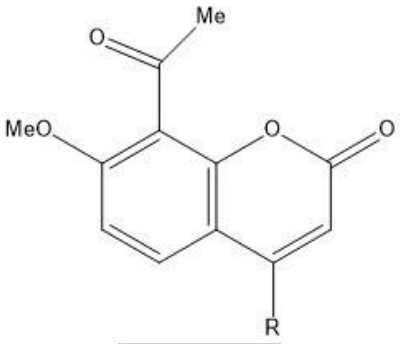
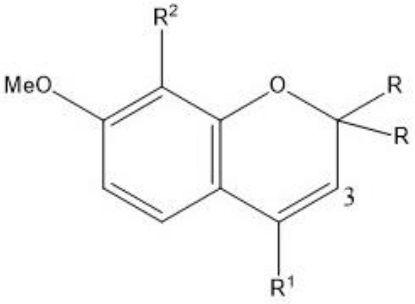
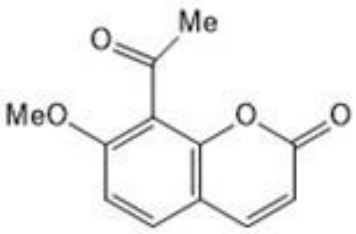
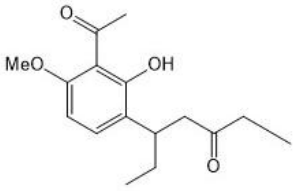
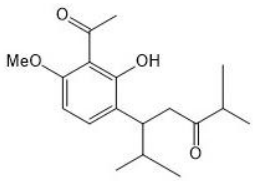
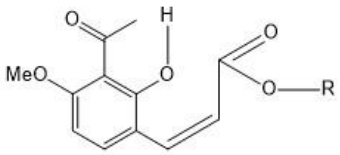
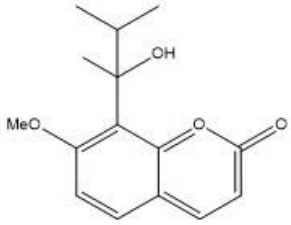
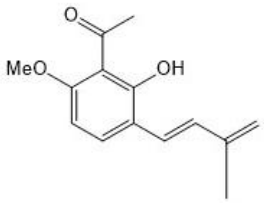
Substrates	Products	Ref
 RMgX R= Me, Et, Me_2CH_2, Ph, P-anisyl	 R= Ph, R^1= H_1 R2= $MeC^{1/}(OH)Ph$ R= P-Anisyl, R^1 H R2=MeC(OH)Anisyl-P R,R_1= Me, R_2=$MeC^{1/}$=$C^{2/}(H_2)$ R=Et, R^1=Me, R^2=$MeC^{1/}(OH)Et$ R=Pr^i, R^1= Me, R^2=$MeC^{1/}$, $C^{2/}Me_2$ R=$(CH_2)_2Ph$, R^1= Me R^2= $MeC^{1/}(OH)(CH_2)_2Ph$ R= Ph, R^1= Me, R^2= MeC(OH)Ph R=P-Anisyl, R^1= Me R2=P-Anisyl$C^{1/}$=$C^{2/}H_2$	101, 102
	    	101

Table -4 Selected Examples of Grignard Reaction with Coumarins

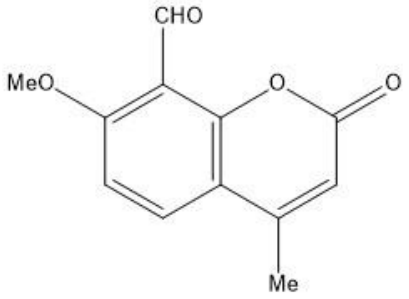
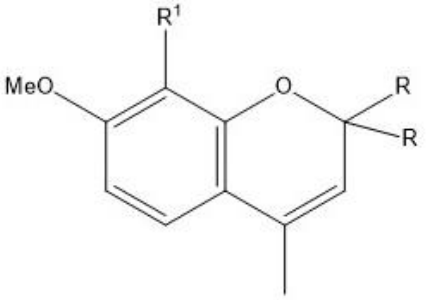
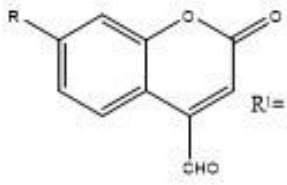
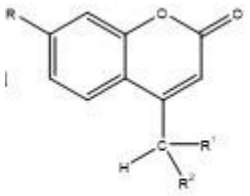
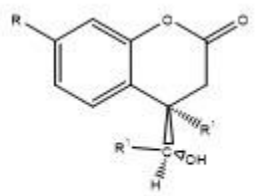
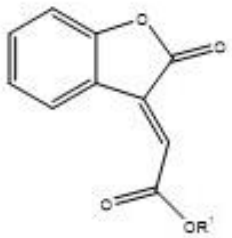
Substrates	Products	Ref
 RMgX R= Me, Et,i-Pr,Ph, p-Anisyl	 R= Me, R^1=Me=CH_2 R=Et, R^1=MeC(OH)Et R= $CHMe_2$, R_1=Me=$C(Me)_2$ R=Ph, R_1=MeC(OH)Ph R=p-Anisyl, R^1= p-Anisyl C=CH_3 R=Me, R^1=CH(OH)Me R=Et, R^1=CH(OH)Et R=$CHMe_2$, R^1= CH(OH)CMe_2 R=Ph, R^1=CH(OH)CPh_2 R=p-Anisyl, R_1=CH(OH)C p-Anisyl	102
 R^1-MgX R^1= Ph, Et,Pr^i, Bu^t, p-Anisyl R=H R=OMe	 R,R^1=H, R^2=OH R=OMe, R^1=H, R^2=OH R=H, R^1=Ph, R^2=OAc R=OMe, R^1=Ph, R^2=OH R=H, R^1=p-Anisyl, R^2=OAc R=OMe, R^1=p-Anisyl, R^2=OH R=H, R^1=Et, R^2=OH R=OMe, R^1=Et, R^2=OH R=OMe, R^1=Pr^i, R^2= OH R=OMe, R^1=Pr^i, R^2=OAc R=H, R^1,R= Z CHCHMe$_2$ R= OMe, R^1=Bu^t, R^2=OH  R=H, R^1=Me R=OMe, R^1=Me R=OMe, R^1=Et  R=H, R^1=Pr^i R=OMe, R^1=Pr^i	126

Table -4 Selected Examples of Grignard Reaction with Coumarins

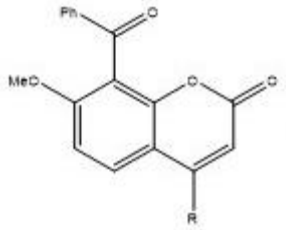
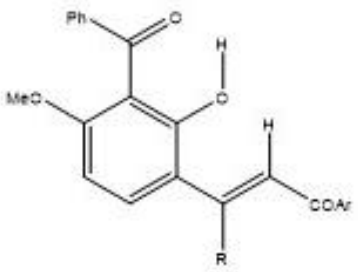
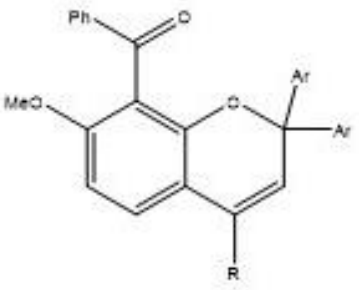
Substrates	Products	Ref
 ArMgBr R=H R=Me	 Ar=Ph, R=H Ar= p-OMeC$_6$H$_4$, R=H  R=H, Ar= Ph R=Me, Ar=Ph R=Me, Ar= p-OMeC$_6$H$_4$	126

Table -4 Selected Examples of Grignard Reaction with Coumarins

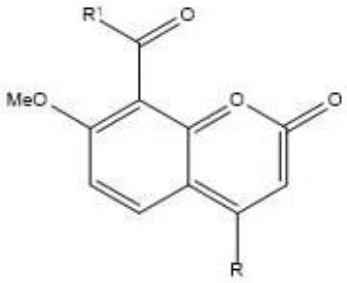
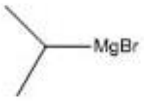
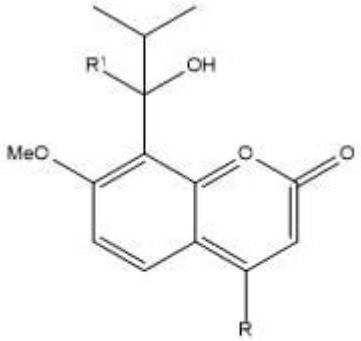
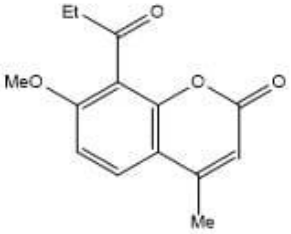
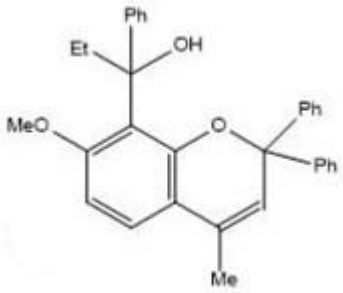
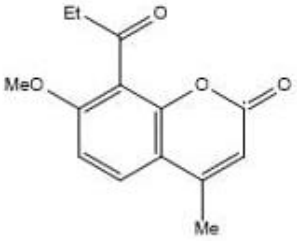
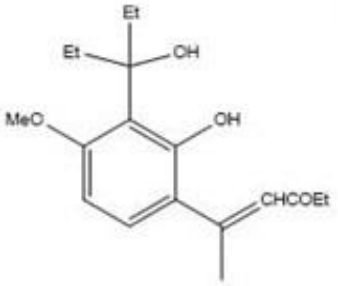
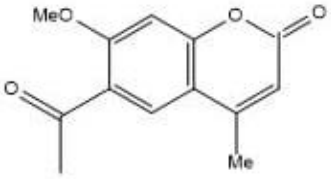
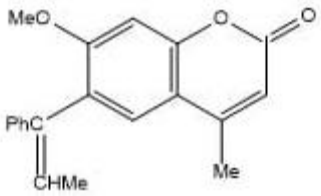
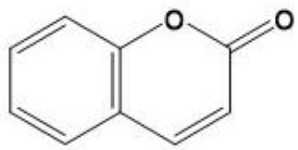
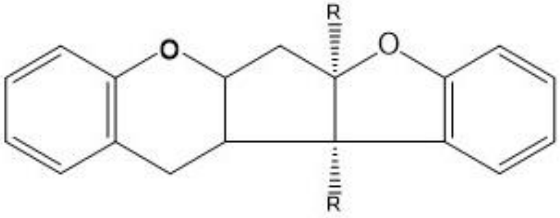
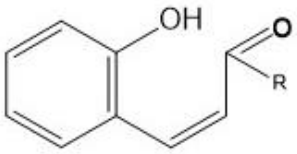
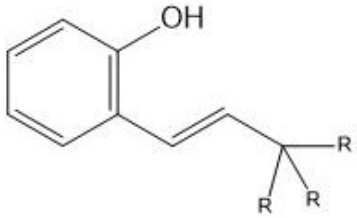
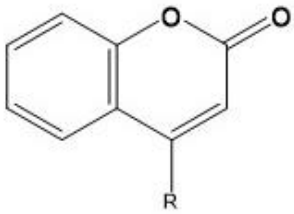
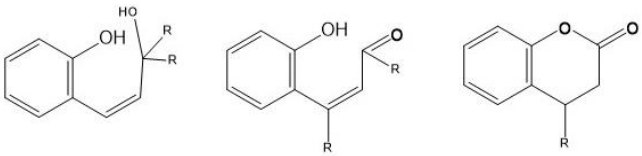
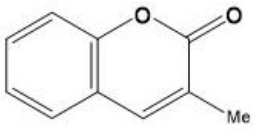
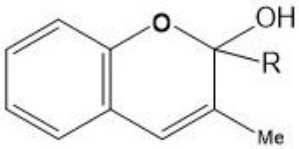
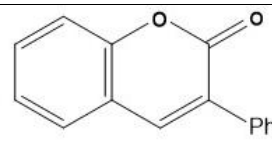
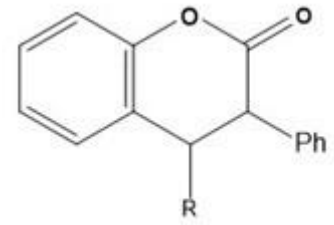
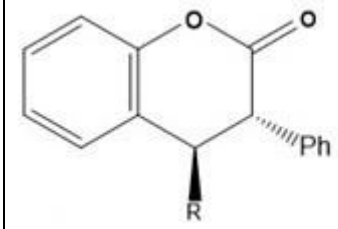
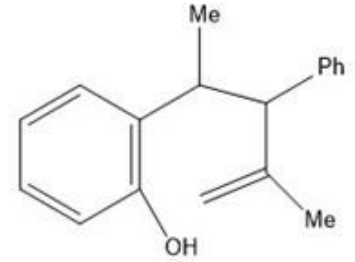
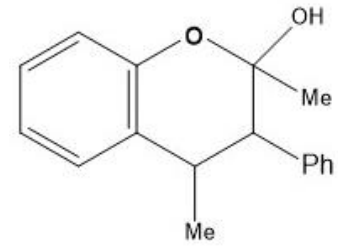
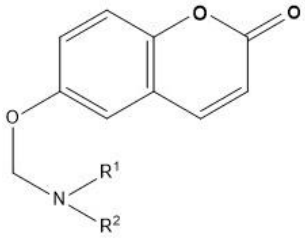
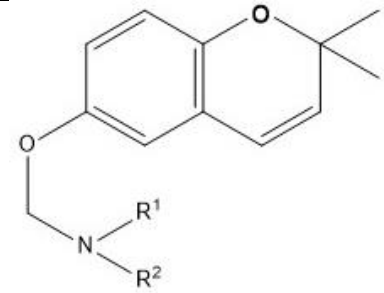
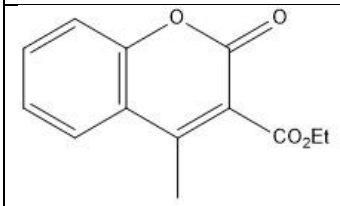
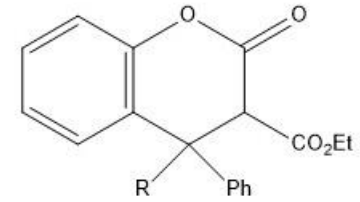
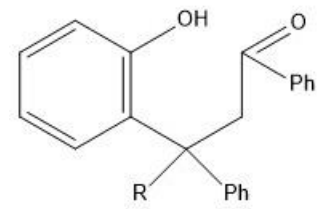
Substrates	Products	Ref
  R= H, R^1=Me R=Me, R^1=Me R=H, R^1= Ph R=Me, R^1=Ph	 R= H, R^1=Me R=Me, R^1=Me R=H, R^1= Ph R=Me, R^1=Ph	127
 PhMgBr		127
 EtMgBr		127
 PhMgBr		127

Table-5 Selected Examples of Grignard Reaction with Coumarins

Substrates	Products	Ref
 RMgX (R=Me, Ph)		103, 104
RMgX (R=Ph, $CHMe_2$)		105
RMgX (R=Me,Pr, Ph, allyl)		105
RMgX (R=$PhCl_2CH_2$, i-Pr)		105
RMgX		106, 107
 RMgX (R=Ph, p-Anisyl, napthyl)		108, 109

 RMgX R=Et, Me_2CH, Me_3C	 	109
RMgX R=Me	 	110
 RMgX R=1-bromo napthalene		111
 PhMgX	 	112

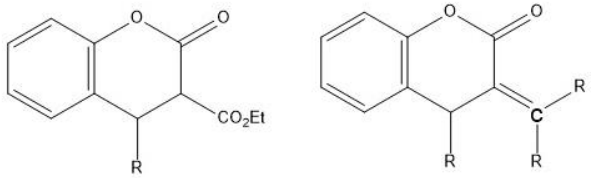
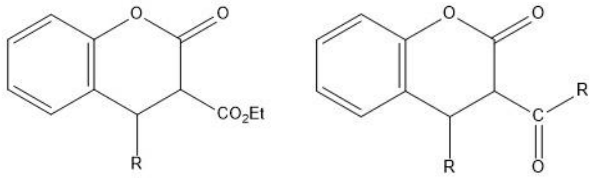
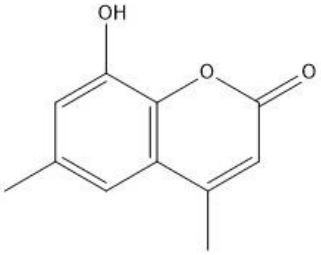
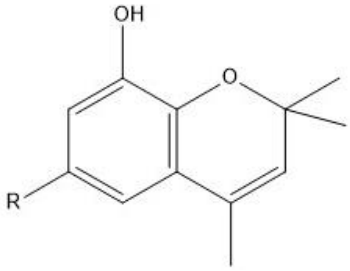
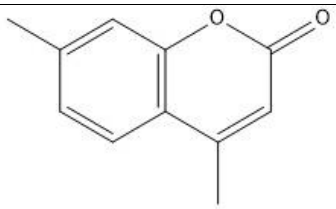
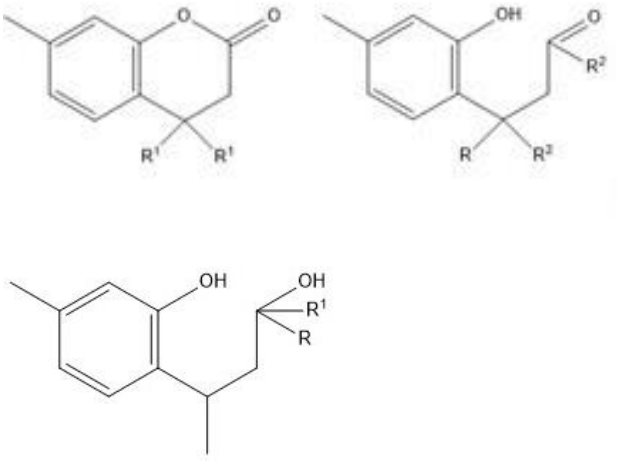
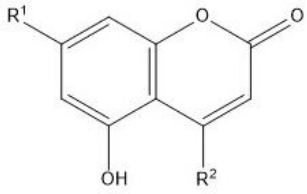
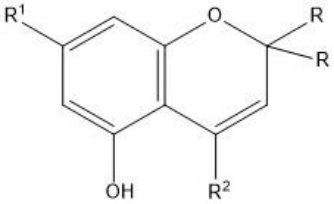
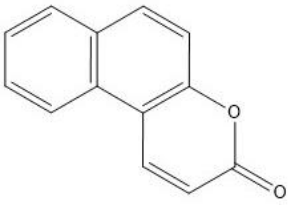
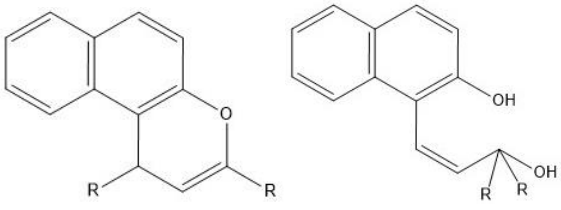
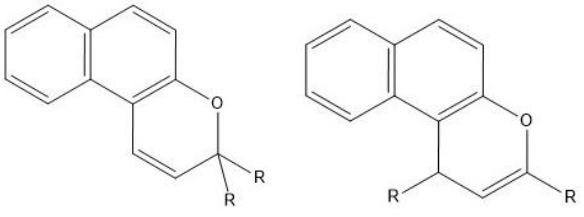
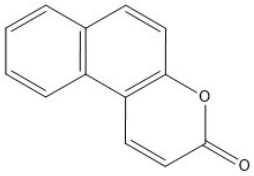
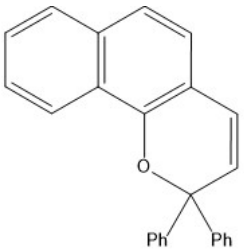
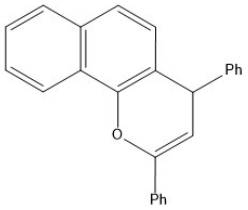
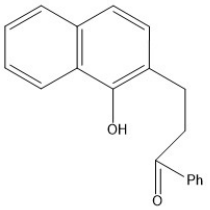
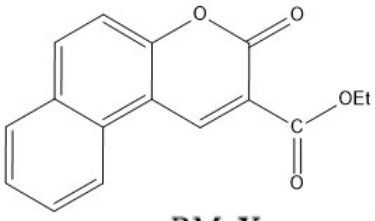
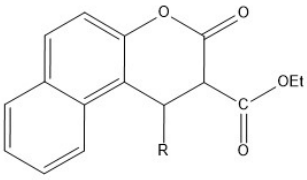
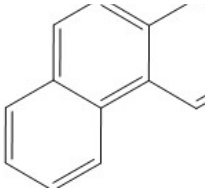
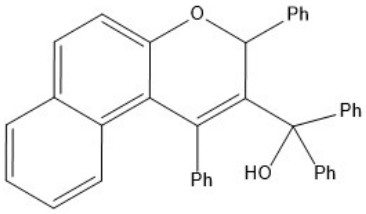
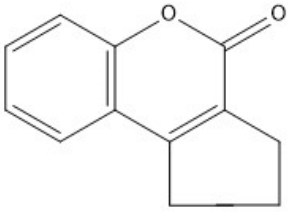
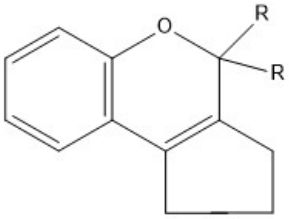
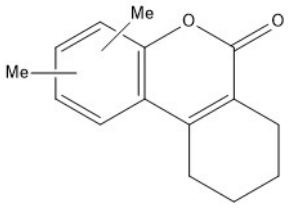
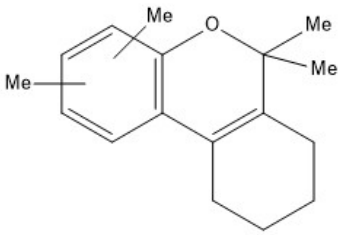
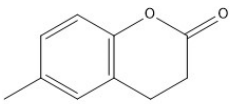
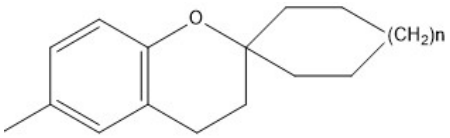
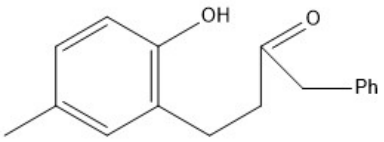
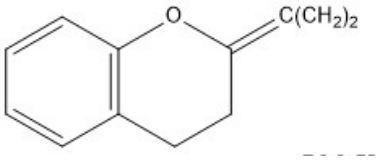
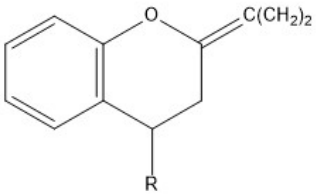
RMgX R=p-anisyl		113
RMgX (R=Me_3C)		114
 RMgX R=Me		115
 R^1MgX R^1= Et, Me2CH, Cyclohexyl		115
 RMgX R= Me,Ph		115
 RMgX R=o,m-anisyl		116
RMgX R=p-anisyl		117

Table-5 Selected Examples of Grignard Reaction with Coumarins

Substrates	Products	Ref
 PhMgX X=Br	  	118, 119
 RMgX R=Ph,i-pr RMgX R=Ph	  	120
 RMgX R=Me		121
 RMgX R=Me		122

 $BrCH_2(CH_2)nCH_2CH_2MgBr$ n=1,2 $PhCH_2MgBr$	 	123 124
 RMgX R=Me,Et,Ph,Me_2CH		125