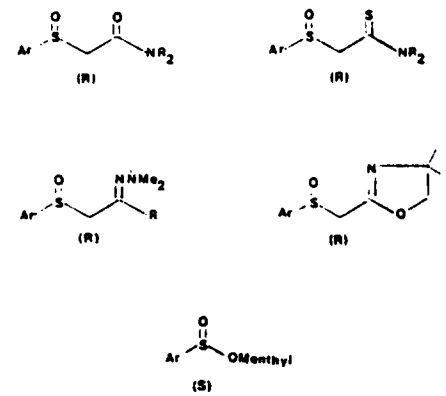
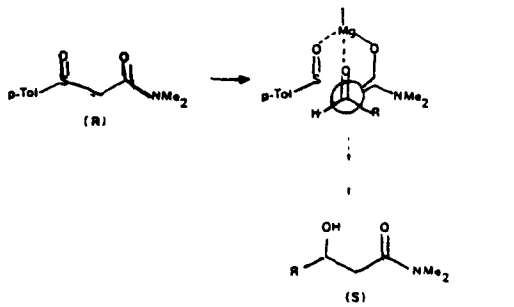


Ar = p-$CH_3C_6H_4$

1-9



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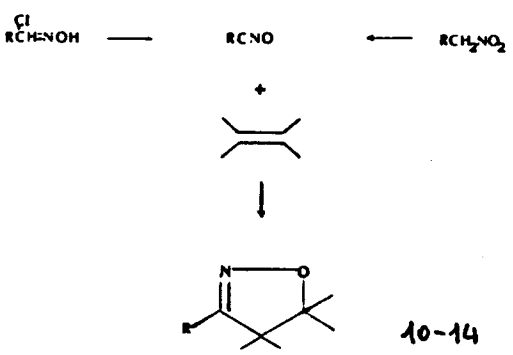

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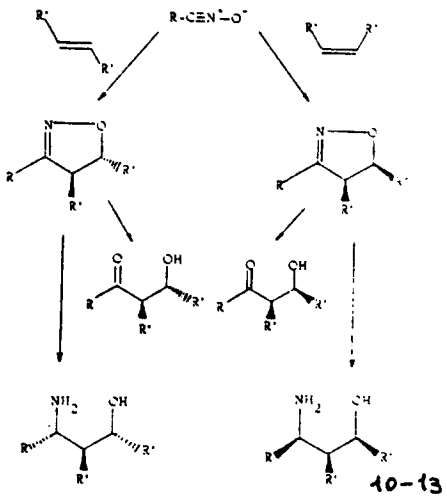

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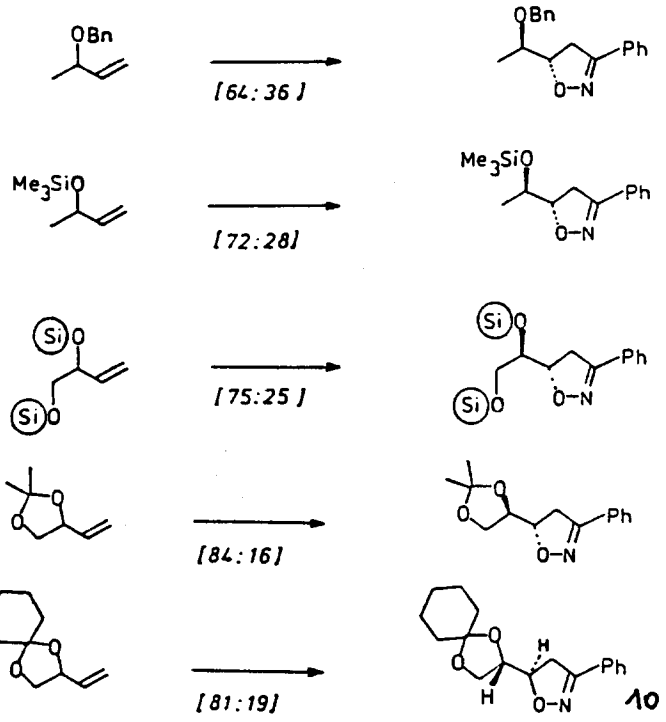

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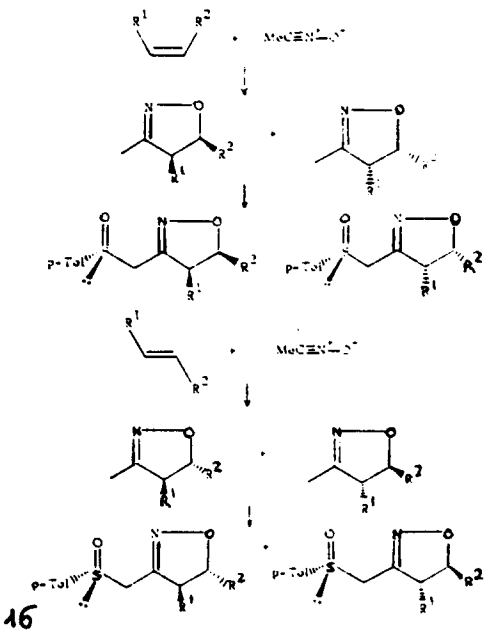

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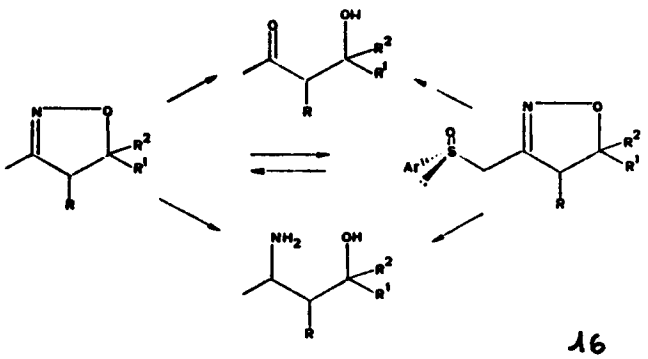

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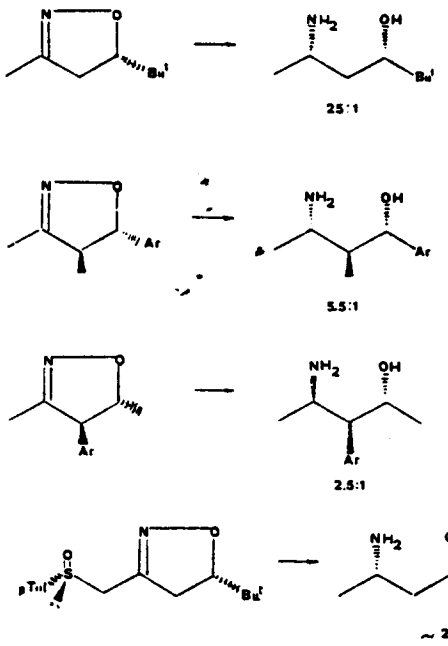


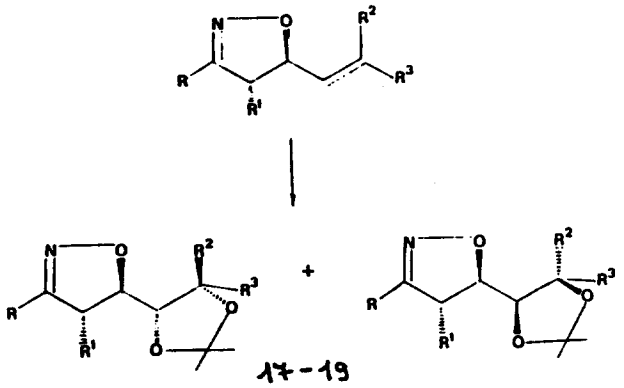
25:1

5.5:1

2.5:1

~ 2:1

Ar = C_6H_4OMe 16



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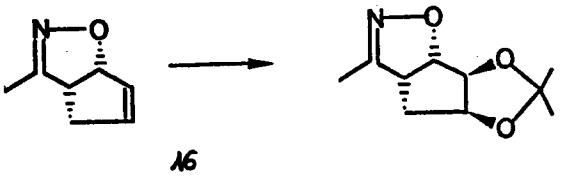

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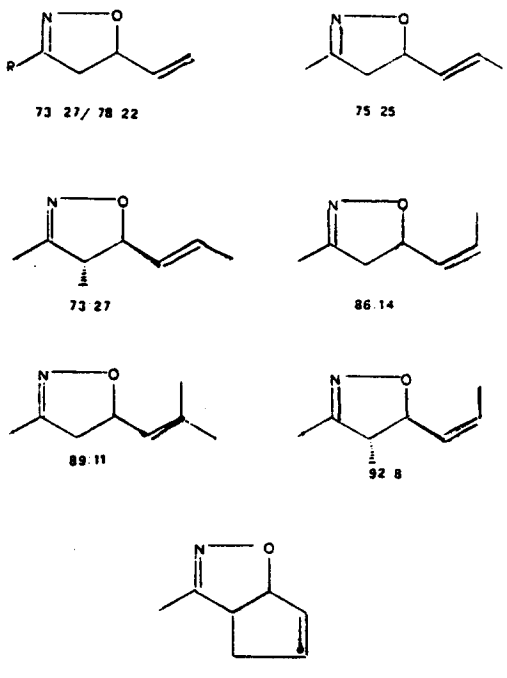


73 27/ 78 22

75 25

73:27

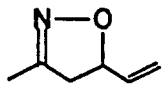
86:14

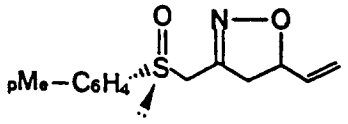
89:11

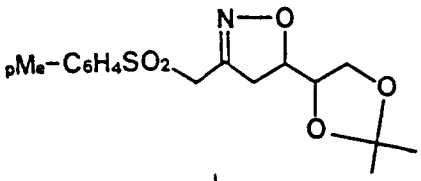
92 8

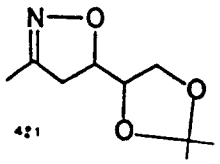
100:0

16



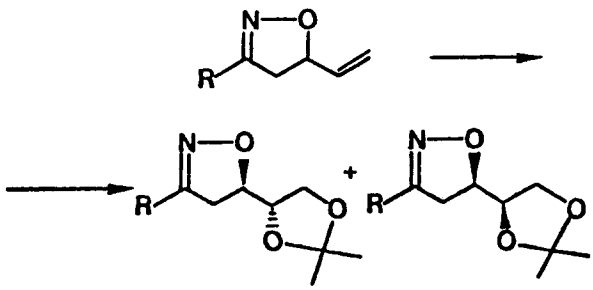






4:1

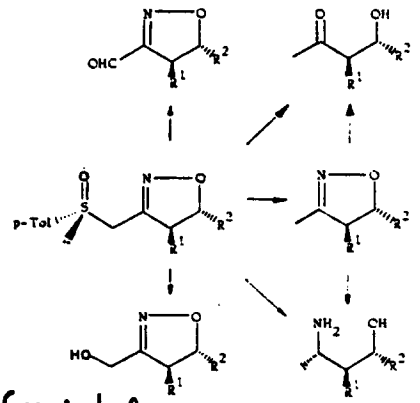
16



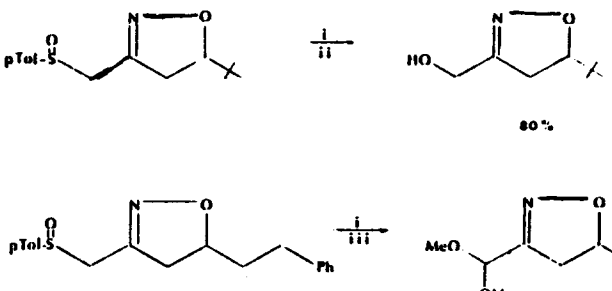
a R = 72:28

b R = 75:25

16

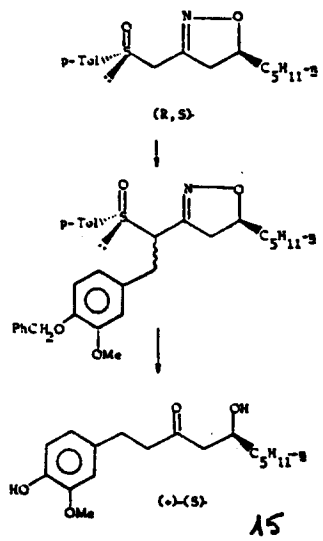


Cozzi et al



i 2,6 Lutidine, TFAA
ii $NaHCO_3$. $NaBH_4$
iii MeOH, PTS, $Hg(OAc)_2$

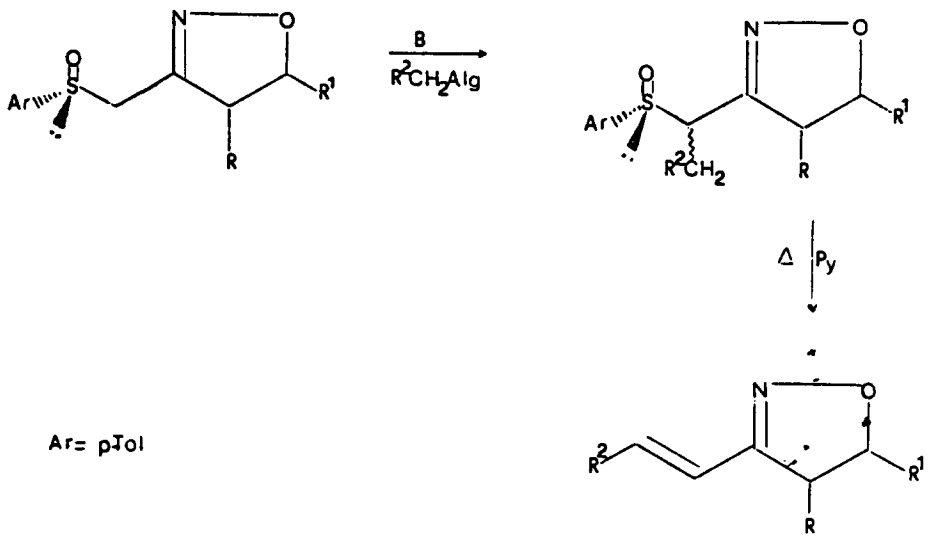
Cozzi et al.



(R,S)

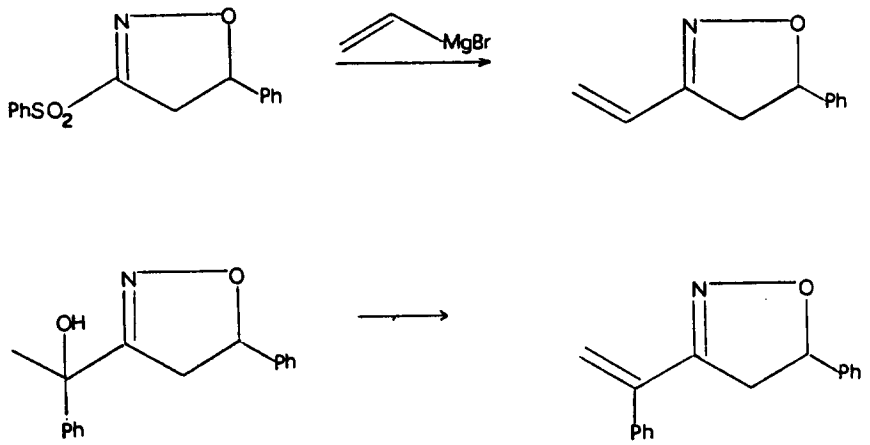
(+)-(S)

15



Ar= pTol

20



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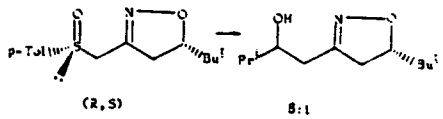

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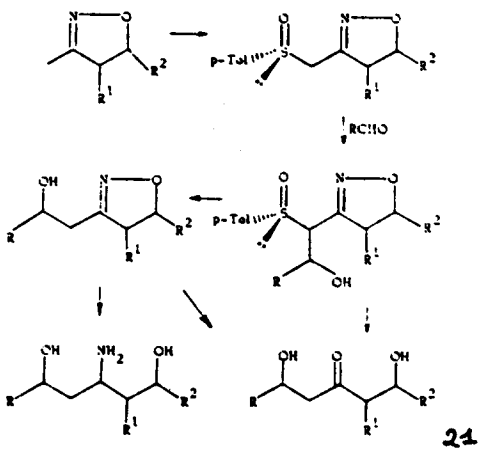
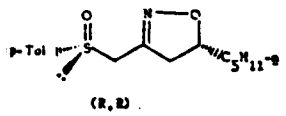


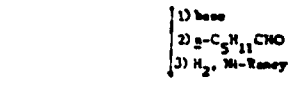
21

EtCHO	MgDA	5:1
EtCHO	Bu^tMgBr	70:1
Pr^iCHO	MgDA	3,5:1
Pr^iCHO	Bu^tMgBr	8:1
Bu^tCHO	MgDA	2:1
Pr^iCHO	MgDA	1:2
Pr^iCHO	Bu^tMgBr	1:4

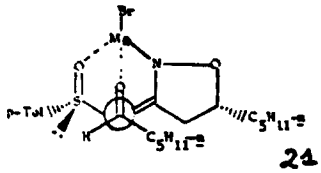
21



(R,R)



(R,R)/(S,R) 3:1



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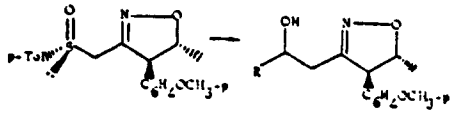
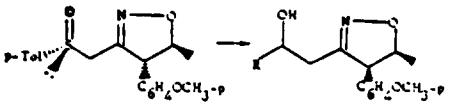
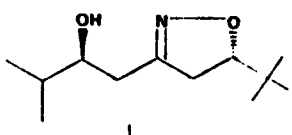


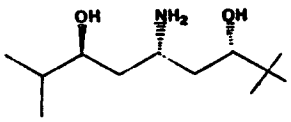


21

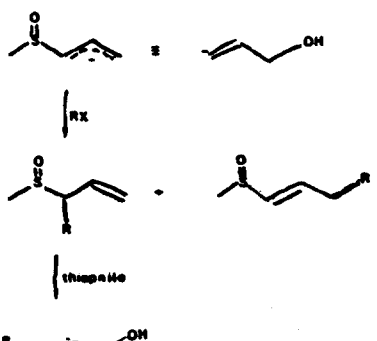
	R	Base	d.r.
a)	Et	MgDA	50:1
a)	Pr^i	Bu^tMgBr	20:1
a)	Pr^i	MgDA	17:1
a)	Bu^t	MgDA	14:1
b)	Et	MgDA	1:50
b)	Pr^i	Bu^tMgBr	1:50
b)	Pr^i	MgDA	1:20
b)	Bu^t	MgDA	1:2

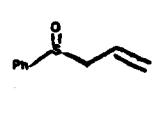
21

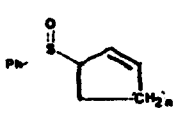




≥50:1 22-23

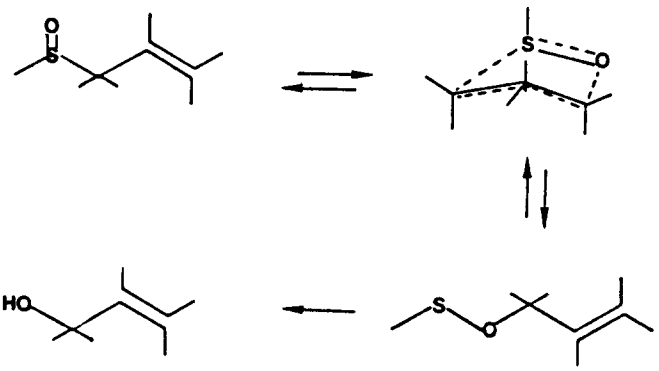


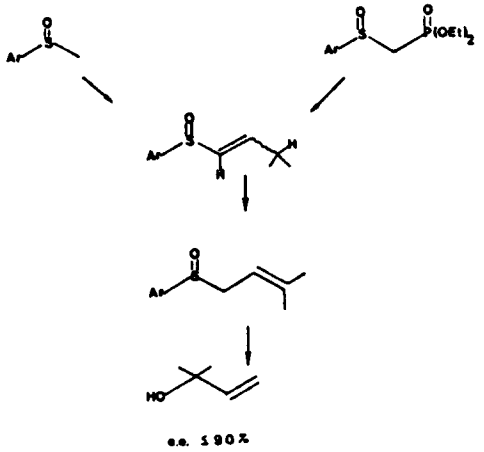




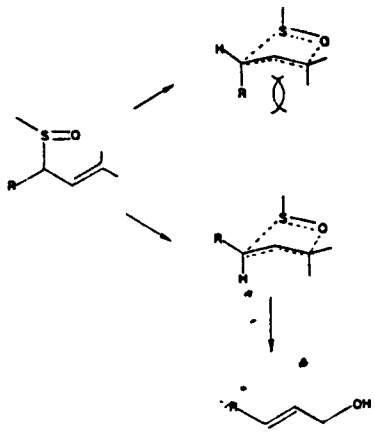
n=1,2

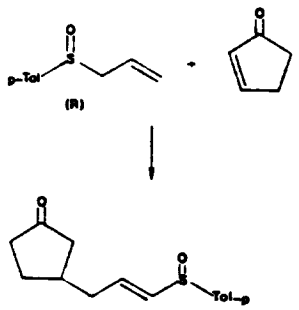
25-28



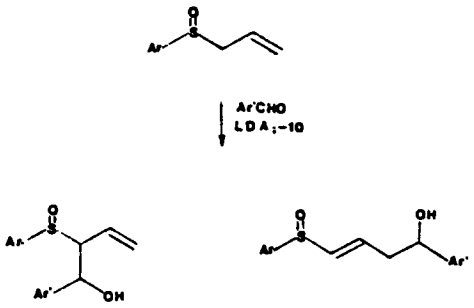


e.e. ≤ 90 %





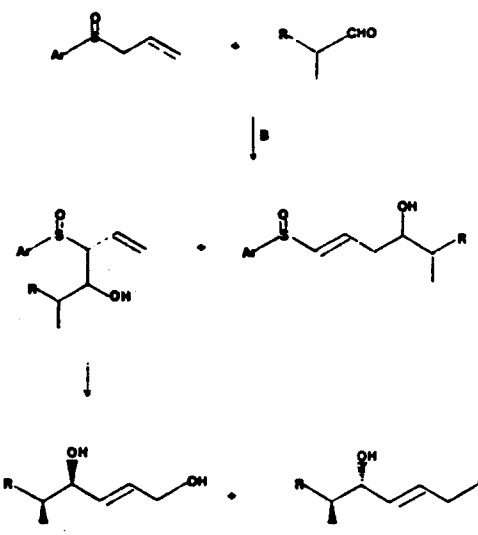
(R,R) e.e. 96 %



α/γ 1:1 – 1:2.6

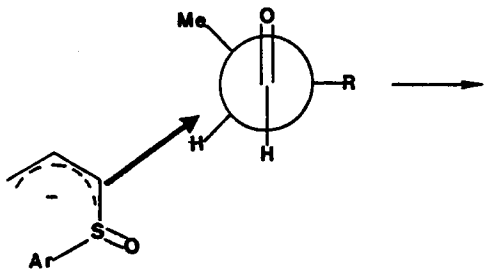
d.r. ≤ 4:1

25-28



Ar = p-Tol

25-28



Synthesis of E-diols.

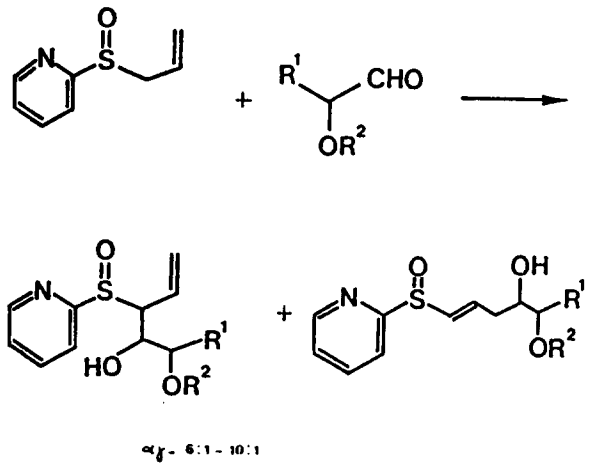
R	Method	α/γ ratio	Yield (%)	syn/anti ratio
Et	A	6.1:1	40	2.1:1
Et	B	-	65	2.2:1
i-Pr	A	10:1	40	5.1:1
c-C_6H_{11}	A	5.6:1	57	6.4:1
c-C_6H_{11}	B	-	61	6.4:1
Ph	A	9:1	67	28:1

22-23

Reaction of Ph-CH(Me)-CHO with p-Tol-SO-CH_2-CH=CH_2 in THF.

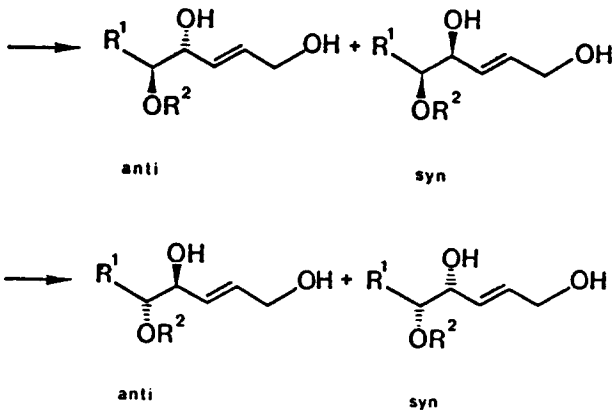
Additive	Equivalents	Yield %	α/γ
	-	83	1.1:1
HMPA	1.1	70	4:1
HMPA	4.4	67	9:1
CuI	2	48	4:1
CuI	6	58	1:1.5
$MgBr_2$	6	45	1:1.4
$ZnCl_2$	6	435	1:7.7
CdI_2	6	60	1:14

25-28



α/γ - 6:1 - 10:1

25-30

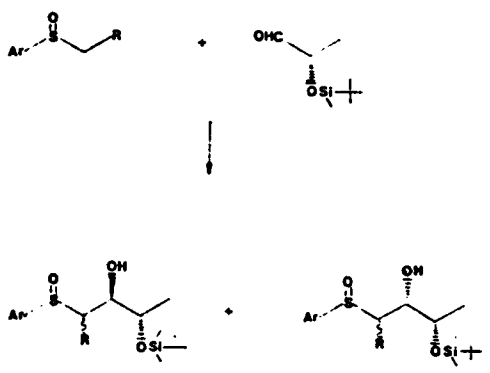


anti syn

25-30

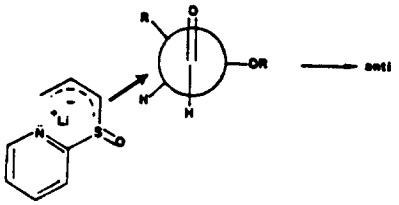
R^1	R^2	Yield %	anti/syn ratio
Me	CH_2Ph	51	2.5:1
Me	$SiMe_2Bu^t$	40	5.5:1
CH_2OCH_2Ph	CH_2Ph	68	3.0:1
-CH_2O-(c-C_6H_{10})-		60	6:1
-CH(Me)O-(c-C_6H_{10})-		60	6:1

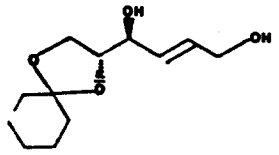
25-30

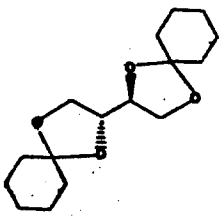


		(R)	(S)
Ar = p-Tol	R = H	1 :1	1.2:1
	R = Bu^t	1.4:1	2.2:1

33







i) O_3 ii) $NaBH_4$ iii)

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