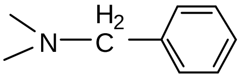
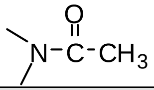
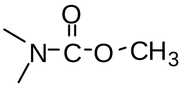
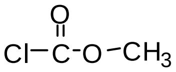
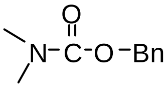
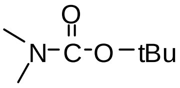
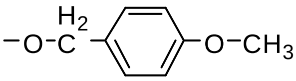
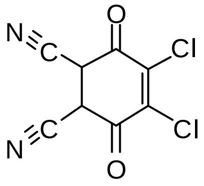
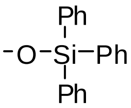
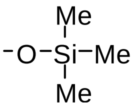
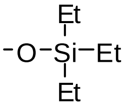
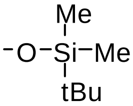
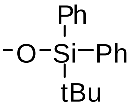
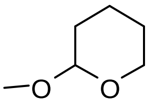
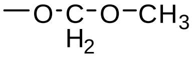
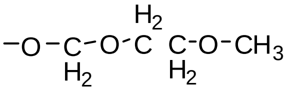
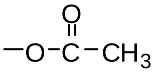
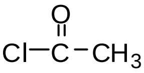
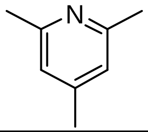
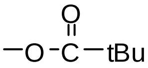
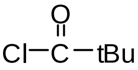
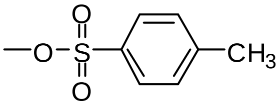
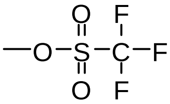
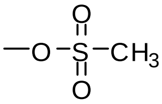
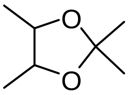
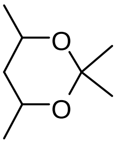
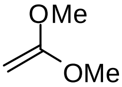
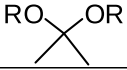
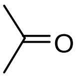
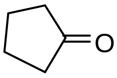
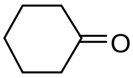
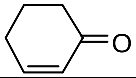
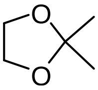
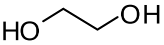
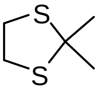
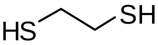
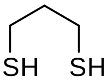
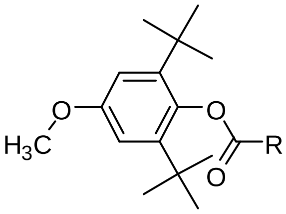
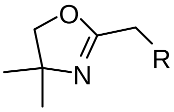
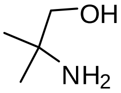
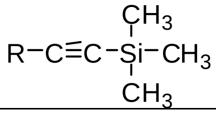
Compuesto a proteger	**Grupo protector**	**Para ponerlo**	**Para quitarlo**	**Comentarios**
Aminas	Alquilación			
	N-Bn  bencilo	1. Base 2. BnBr	H_2 / Pd Hidrógenolisis en medio ácido (AcOH) Para que se forme la sal	La hidrogenolisis leve tiene preferencia por el N antes que el O
	Formación de amidas			
		Ac_2O ó CH_3COCl	H^+ ó OH^-	No recomendado
	Formación de carbamatos o uretamas			
		 $Cl-\overset{O}{C}-O-CH_3$ Cloroformiato de metilo + H_2CO_3 ó Et_3N	Me_3SiI en $CHCl_3$	
	N-CBz  benziloxicarbonilo	Cl-CBz + Et_3N	H_2 / Pd	
	N-BOC  *terc*butoxicarbonilo	BOC_2O + Et_3N	HCl diluido ó CF_3-COOH	Mejor que CBz Un ácido de Lewis ($AlCl_3$) tiene preferencia por liberar este grupo
Alcoholes	Alquilación (Formación de enoles)			
	O-Bn eter de bencilo	1. Base 2. BnBr	H_2 cat ó HBr	
	O-tBu	1. Base 2. tBuBr	HCl 4M	
	O-PMB  parametoxibencilo	PMBCl + Et_3N ó DMAP	DDQ  1,2 dicloro-5,6-dicianoquinona	Ruptura selectiva
	O- Tr  $-O-\overset{Ph}{\underset{Ph}{Si}}-Ph$ tritilo	TrCl + Et_3N ó DMAP + CH_2Cl_2	H^+	
	Silil éteres			
	O-TMS  $-O-\overset{Me}{\underset{Me}{Si}}-Me$ trimetilsililo	Et_3N + Cl(TfO)TMS	TBAF (n-Bu_4NF) fluoruro de tetra(n-butil)amonio ó HF	La reactividad decrece de arriba a abajo

	O-TES  $-O-\overset{Et}{\underset{Et}{Si}}-Et$ trietilsililo	2,6 lutidina + Cl(TfO)TES	TBAF ó HF	
	O-TBS  $-O-\overset{Me}{\underset{tBu}{Si}}-Me$ *terc*butildimetilsililo	Imidazol + ClTBS ó Lutidina + TfOTBS	TBAF ó HF	
	O-TBDPS  $-O-\overset{Ph}{\underset{tBu}{Si}}-Ph$ *terc*butildifenilsililo	Base + Cl(OTf)TBDPS	TBAF ó HF	
	Acetales			
	O-THP  tetrahidropirano	1. DHP + H^+ 2. R-OH	H^+ (TsOH, PPTS, $BF_3 \cdot Et_2O$)	Soporta reductores, bases. No aguanta acidos
	O-MOM  $-O-\underset{H_2}{C}-O-CH_3$ metoximetileno	1. Base 2. ClMOM	$ZnBr_2$	No aguanta ácidos
	O-MEM  $-O-\underset{H_2}{C}-O-\overset{H_2}{C}-\underset{H_2}{C}-O-CH_3$ metoxietoximetileno	1.Base 2. ClMEM	$ZnBr_2$	No aguanta ácidos
	Esteres			
	O-Ac  $-O-\overset{O}{\overset{\|\|}{C}}-CH_3$ acetato	Ac_2O / Pi Ac_2O / Et_3N  $Cl-\overset{O}{\overset{\|\|}{C}}-CH_3$/$Et_3N$	NH_3 en MeOH	Con colidizina se selecciona el OH primario 
	 $-O-\overset{O}{\overset{\|\|}{C}}-tBu$ pivaloilo	 $Cl-\overset{O}{\overset{\|\|}{C}}-tBu$ + Pi	NH_3 en MeOH	Protege alcoholes primarios en presencia de secundario
	Esteres de azufre			
	O-Ts  tosilato	TsCl + Pi ó Et_3N	Na(Hg) (libera)	H^- (destruye alcohol)
	O-Tf  $-O-\overset{O}{\underset{O}{S}}-\overset{F}{\underset{F}{C}}-F$ Triflato	TsCl + Pi ó Et_3N	Na(Hg) (libera)	H^- (destruye alcohol)

	O-Ms  mesilato	MsCl + Et_3N	Na(Hg) (libera)	H^- (destruye alcohol)
Dioles	Cetales			
	 1,2-dioxolanos  1,3-dioxolanos	MeCOMe + H_2SO_4 ó TsOH	H^+ / H_2O	El éxito de la protección depende de retirar el agua
		$Me_2C(OMe)_2$ + TsOH (transcetalación)		
		 ester de enol		
Carbonilos	O,O acetales			
		CH_3OH / Et_3N $TiCl_4$	H^+ / H_2O	Reactividad cetalización RCHO >  >  >  > 
		 + etilenglicol $BF_3·Et_2O$	H^+ (TsOH)/ H_2O	
	S,S acetales			
		 etanoditiol  propanoditiol $BF_3·Et_2O$	$HgCl_2$ / $CaCO_3$	Con Ni Raney / H_2 EtOH se produce la eliminación del carbonilo (desulfuración)
Carboxilo	Esteres			
	RCOOR’	R’OH + H^+ ó R’OH + DCC (diciclohexilcarbodiimida)	HO^- + H_2O	
	RCOOMe ester metilico	CH_2N_2	HO^- + H_2O	
	RCOOtBu ester de *terc*butilo	tBuOH + H^+ + DMAP (4-dimetilaminopiridina)	TsOH ó CF_3-COOH	
	RCOOBn ester de bencilo	BnOH + H^+	H_2 cat ó HBr	

	 RCOOBHA ester voluminoso	1. BHA (hidroanisol butilado) + BuLi 2. ClCOR	$(NH_4)Ce(NO_3)_6$ CAN (cerioamonionitrato)	Bloquea estericamente el carbonilo
	Oxazolinas			
	 oxazolina		H^+	Protege el hidroxilo y el carbonilo a la vez
Alquinos	Metalación			
	 $R-C\equiv C-Si(CH_3)_3$	1. BuLi 2. Me_3SiCl	1. $AgNO_3 + F^- +$ MeONa 2. H^+	