

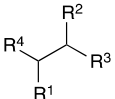

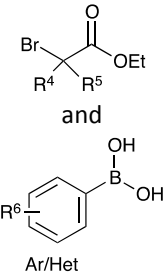
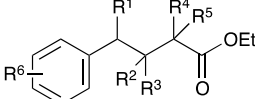

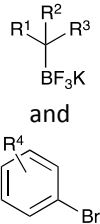
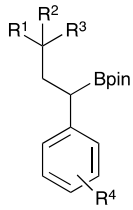

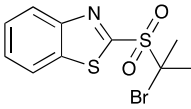
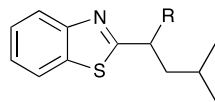
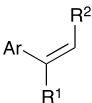

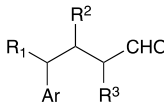

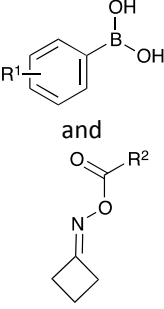
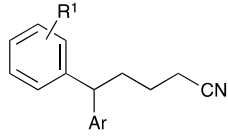
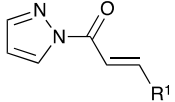
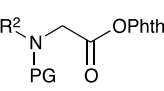
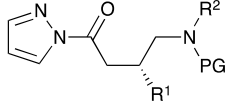
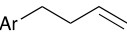
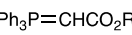
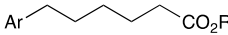

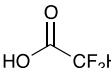
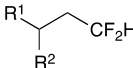

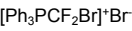
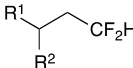

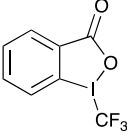
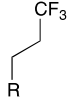
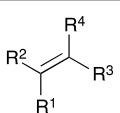
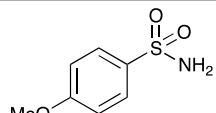
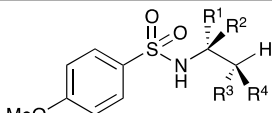
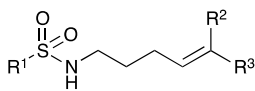
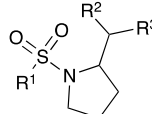

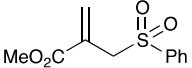
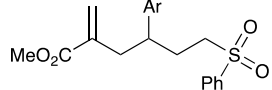
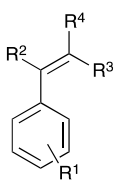
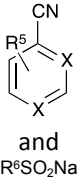
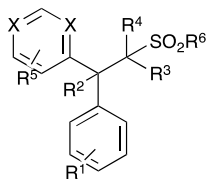
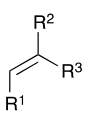
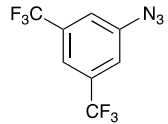
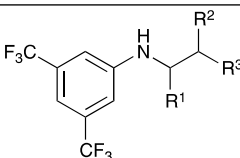
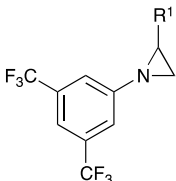
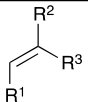
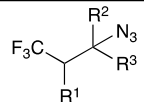
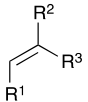
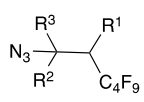

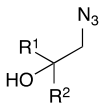
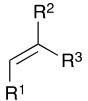
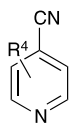
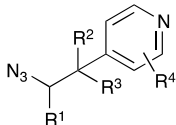

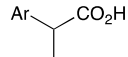

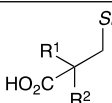

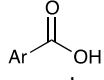
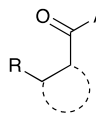
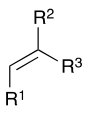
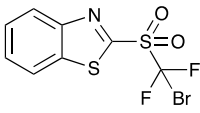
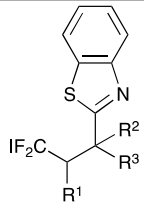

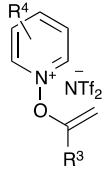
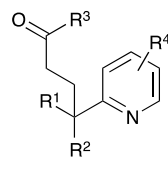
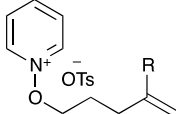
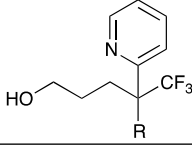

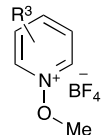
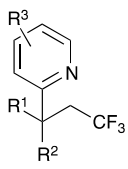

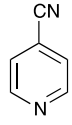
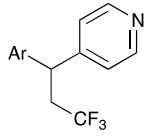

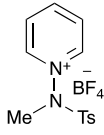
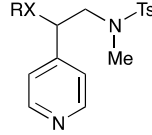
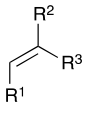
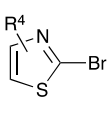
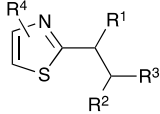
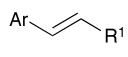
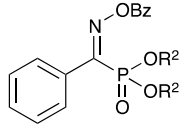
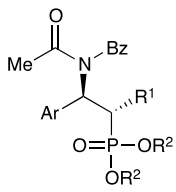
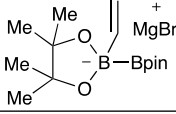
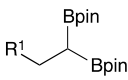

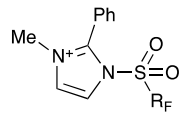
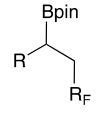


OLEFIN	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
			42
	 <p style="text-align: center;">Ar/Het</p>		43
			44
 <p>Electron-rich olefins (polarity umpolung)</p>			45
			46
	 <p style="text-align: center;">$R^2 = pCF_3C_6H_4$</p>		47
			48
			49
			50
			51
	 <p style="text-align: center;">Togni's reagent</p>		52

	CF ₃ I	 or 	53
			54
	Ar-C≡C-Ts and BrCF ₂ CO ₂ Et		55
	 R ² = <i>p</i> -CF ₃ C ₆ H ₄ and DMSO		56
			57
R ¹ -CH=CH ₂ R ¹ = alkyl	R ² -X X = Cl, Br, I R ² = alkyl		58
			59
	[Ph ₃ PCF ₂ H] ⁺ Br ⁻		60
			61
			62
			63
	 Ar ² = <i>p</i> -CN-Ph R = Me or H		64
			65

			66
	-----		67
			68
	 and R ⁶ SO ₂ Na		69
		 or 	70
	Umemoto's reagent and TMSN ₃		71
	C ₄ F ₉ I and NaN ₃		72
	TMSN ₃ and air		73
			74
	CO ₂ (balloon)		75
	Si-H and CO ₂		76
	 and H ₂ O		77

	 and R ² OH or MeCN	 or 	78
	NaHCO ₃ and air		80
			81
			82
			83
	Umemoto's reagent and MeCN/H ₂ O		84, 85
	R ₂ SH		86
	PhSO ₂ SPh and CF ₃ SO ₂ Na		87
			88
			89
	Ph ₃ P ⁺ CF ₃ COO ⁻ and NaNH ₂		90
	R _F -I and TMSCN		91
			92

	 and Bu ₄ Ni		93
			94
	NaSO ₂ CF ₃		95
	 and NaSO ₂ CF ₃		96
	 and Togni's reagent II		97
 X= N, O			98
			99
	 and MeCN		100
	R ¹ Br		101
	 and B ₂ cat ₂		102

	 and and R^6SO_2Na		103
 or 		 or 	104
	<p>[18-C-6]</p>		105
			106
			107
	<p>-----</p>		108
			109
			110
			111
	<p>-----</p>		112
 $X = C, N, O$	<p>-----</p>		113-115


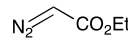
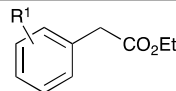

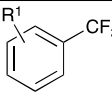

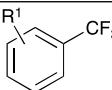

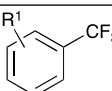

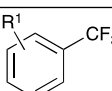

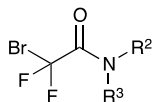
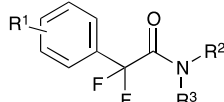


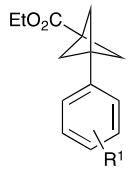
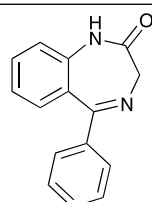
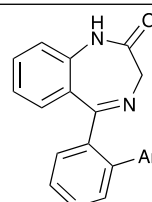

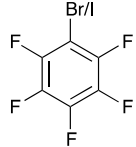
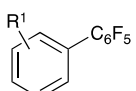

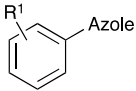


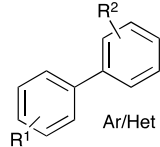

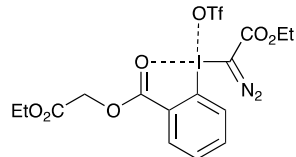
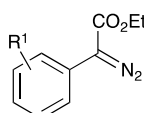
	X-Y X= H, Cl, Br, I, F, N ₃ , S, N, CN, C (sp ³), C(sp ²), C(sp)		116
			117
	Si-CH2-I(Br) or alkyl-Br		119-120
	R _F I		121
			122
			123
			124
			125
			126
			127
			128
			129


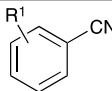

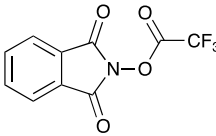
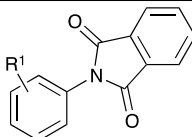

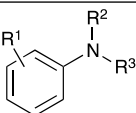

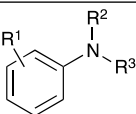

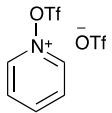
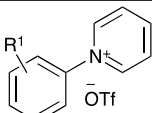
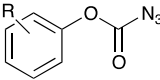
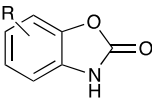

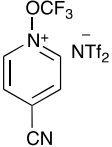
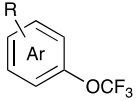

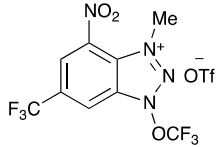
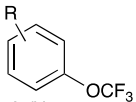

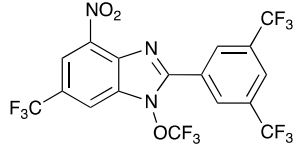
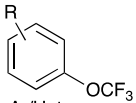
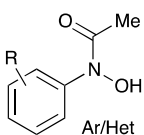
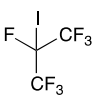
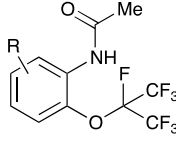

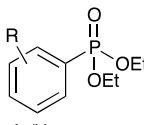


	R ₂ RP RP= Radical Precursor		130
			131
	R ₁ SH		132
	NH ₄ SCN		133
			134
			135
	-----		136
	ROH		137

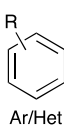
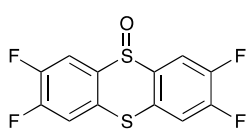
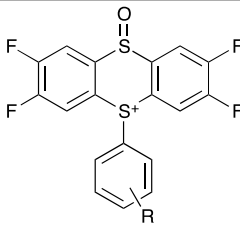

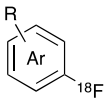


ALKYNE	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
			143
			144
	<i>i</i> Pr ₂ NEt/AcOH as hydrogen source		145
			146


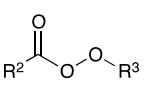
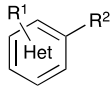

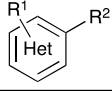

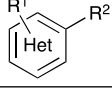

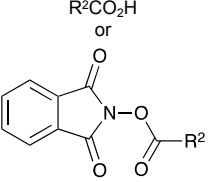
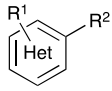

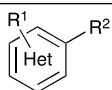

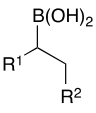
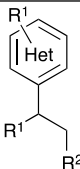

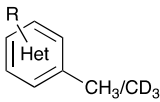

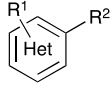

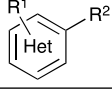

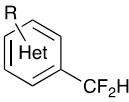
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
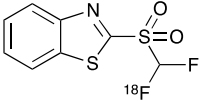
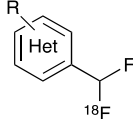


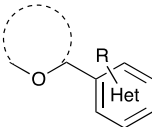

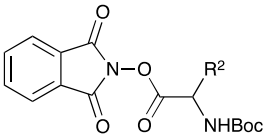
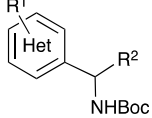


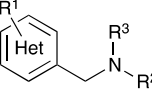

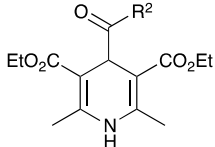
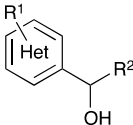

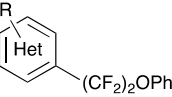

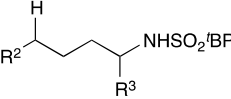
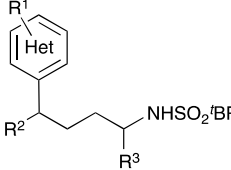
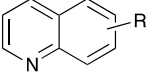
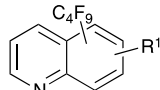
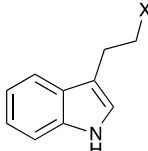
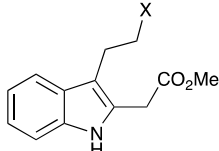

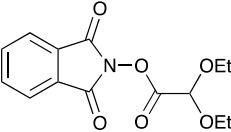
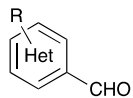

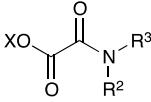
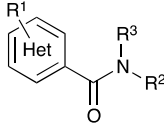
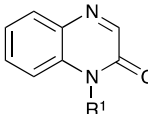
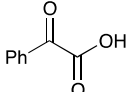
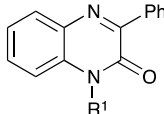
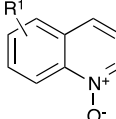

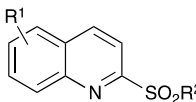
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
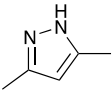
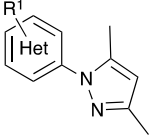



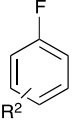
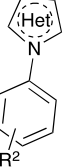
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
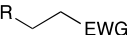

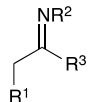
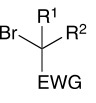
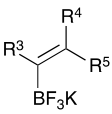
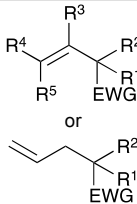

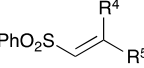
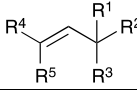

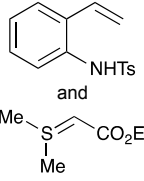
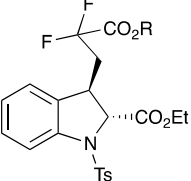
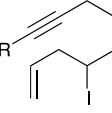
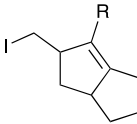


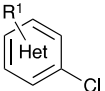



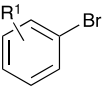
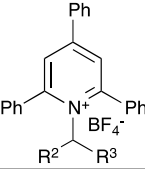
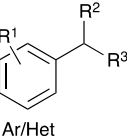
 Ar/Het	Me_3SiCN	 Ar/Het	178
 Ar/Het		 Ar/Het	179
 Ar/Het	R^2NHR^3 azoles	 Ar/Het	180-181
 Ar/Het	R^2NHR^3	 Ar/Het	182-184
 Ar/Het		 Ar/Het	186
	-----		187
 Ar		 Ar	188
 Ar/Het		 Ar/Het	190
 Ar/Het		 Ar/Het	191
 Ar/Het		 Ar/Het	192
 Ar/Het	$\text{P}(\text{OEt})_3$	 Ar/Het	193
	$\text{RS}_2\text{O}_3\text{Na}$ and air		194

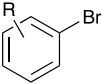

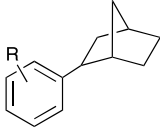
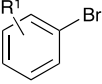
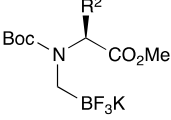
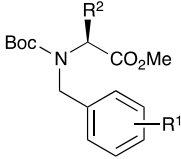
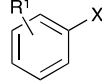

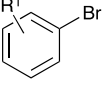
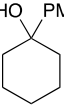
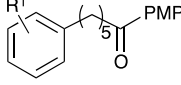
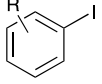
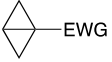
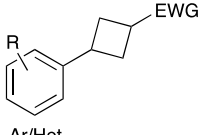
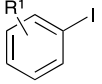

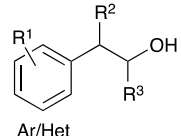
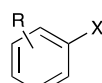
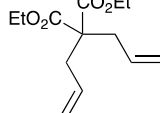
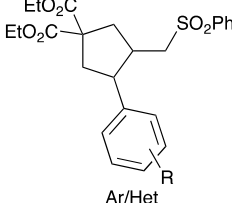


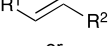
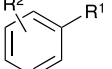
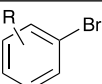
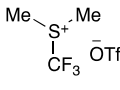
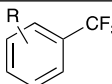
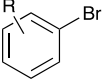

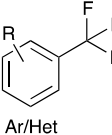
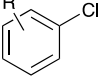

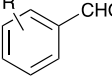
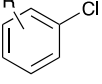
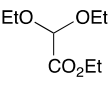
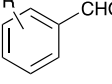
			195-196
	$^{18}\text{F-NBu}_4^+$		197
	DIPEA as hydrogen source		200

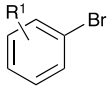
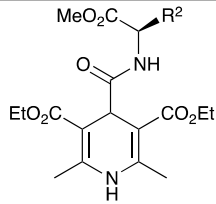
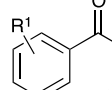
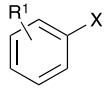
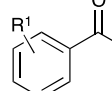
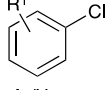
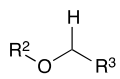
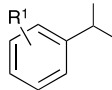
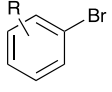
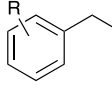
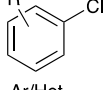
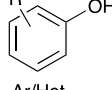
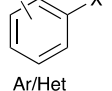
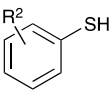
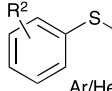
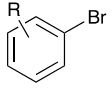
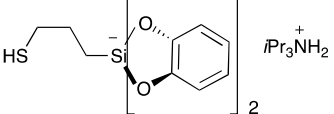
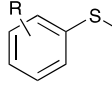
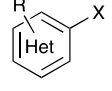
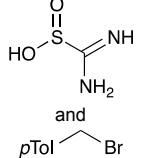
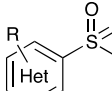
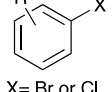
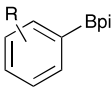
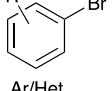
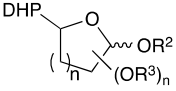
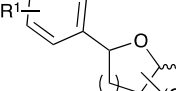
HETEROARENES	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
			204
	R^2OH		208, 209
	$\text{R}^2\text{-X}$ X= I or Br R ² = alkyl		210-213
	$\text{R}^2\text{CO}_2\text{H}$ or 		214-218, 225
	R^2CHO		219
			220
	DMSO or DMSO-d ₆		221
	$\text{R}^2\text{BF}_3\text{K}$ R ² = alkyl		222
	alkanes		223, 224, 228
	$\text{NaSO}_2\text{CF}_2\text{H}$		226


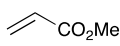
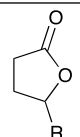
			227
			228
			229-331
			232
			233
	$\text{Br}(\text{CF}_2)_2\text{OPh}$		234
			235
	$\text{C}_4\text{F}_9\text{I}$		236-238
	$\text{Br}-\text{CH}_2-\text{CO}_2\text{Me}$		239
			240
			241
			242
			243

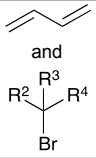

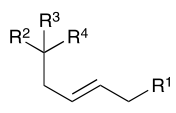
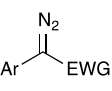
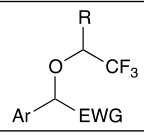
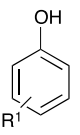
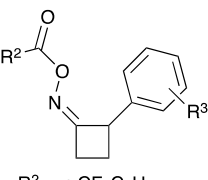
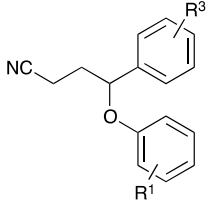
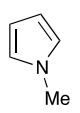
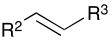
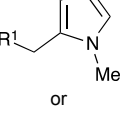
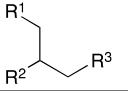
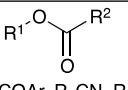
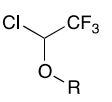
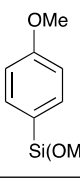
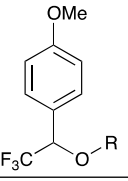
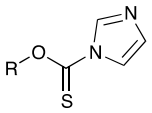
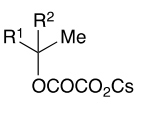
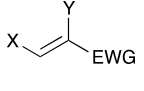
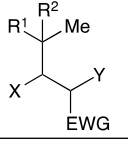
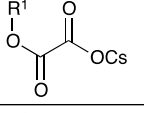
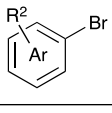
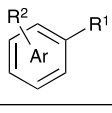
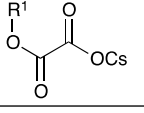
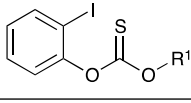
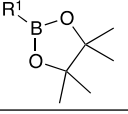
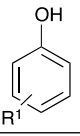
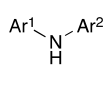
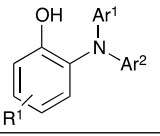
			244
	RCO ₂ H		245
			246

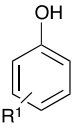
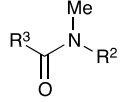
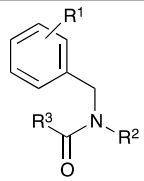
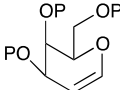
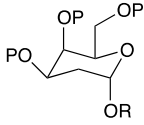
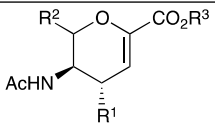
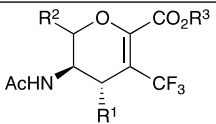
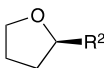
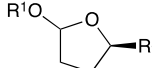
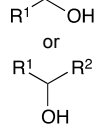
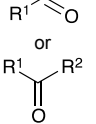
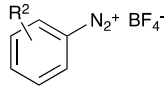
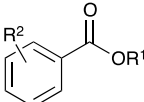
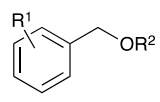
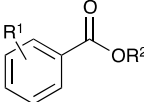
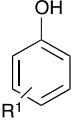
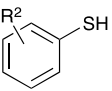
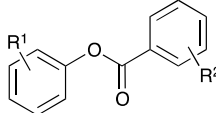
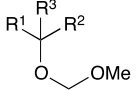

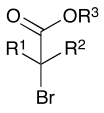
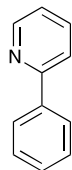
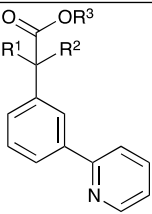
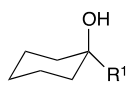
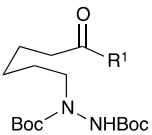
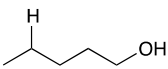
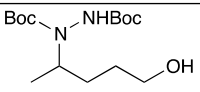
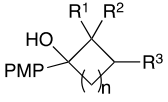
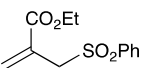
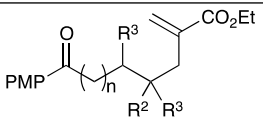
ALKYL AND ARYL HALIDES	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
RI R= alkyl			247
R ¹ Br R ¹ = alkyl			248
			249
			250
			251
	-----		252
RI R= alkyl, aryl, heteroaryl			253
RBr R= alkyl, aryl, heteroaryl	<i>i</i> PrOH-d ₈	RD	254
 or 	(MeO) ₅ CH	 or 	255
			256

 Ar/Het	C-H nucleophile e.g. 	 Ar/Het	257
 Ar/Het		 Ar/Het	258
 Ar/Het X= Br or Cl	$R^2B(O_2Ar)Li$	 Ar/Het X= Br or Cl	259
 Ar/Het		 Ar/Het	260
 Ar/Het		 Ar/Het	261
 Ar/Het		 Ar/Het	262
 Ar/Het X= Br or Cl	 and PhSO ₂ Na	 Ar/Het	263
R^1X X= I, Br R ¹ = alkyl, aryl, heteroaryl	 or  Ar/Het	 or  Ar/Het	264
 Ar/Het		 Ar/Het	265
 Ar/Het		 Ar/Het	266
 Ar/Het		 Ar/Het	267
 Ar/Het		 Ar/Het	268

 Ar/Het		 Ar/Het	269
 Ar/Het	CO and NuH e.g. R ² OH, R ² NH ₂	 Ar/Het	270
 Ar/Het		 Ar/Het	271
 Ar/Het	BnO-CH ₂ -BF ₃ K	 Ar/Het	272
 Ar/Het	H ₂ O	 Ar/Het	273
 Ar/Het X = Cl, Br, I			274
 Ar/Het		 Ar/Het	275
 X = Br or I		 Het	276
 X = Br or Cl	B ₂ pin ₂	 Bpin	277
 Ar/Het		 DHP-CH ₂ -CH(OR ²)-CH ₂ (OR ³) _n	278

ALCOHOLS, ETHERS, AND ANALOGUES	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
			279

R ¹ OH	 <p>and</p> 		280 (N, S, and C nucleophiles also working)
R-CH(OH)-EWG			281
	 <p>R² = <i>p</i>-CF₃C₆H₄</p>		282
R ¹ -CH ₂ -OMs	 <p>or</p> 	 <p>or</p> 	284, 285
R ¹ -CH ₂ -OH	<p>NuH Nu = R²CO₂H ArCOSH, CN⁻, N₃⁻</p>	 <p>R₁SCOAr, R₁CN, R₁N₃</p>	286
			287
	<p><i>i</i>Pr₂NEt as hydrogen donor</p>	RH	288, 289
			290
			291
	Selectfluor [®]	R ¹ F	292
	<p>B₂cat₂ (then pinacol)</p>		293
			294

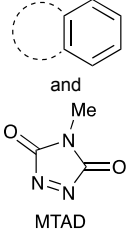
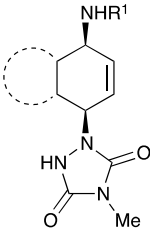
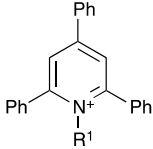
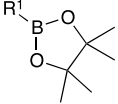
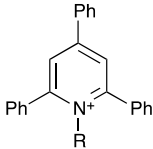

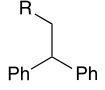
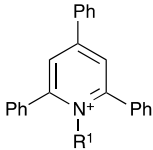
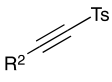
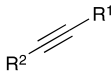
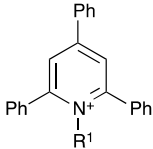
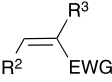
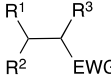
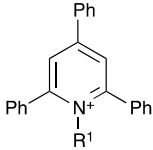
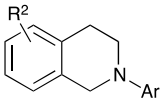
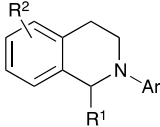
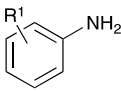
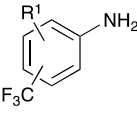
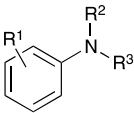
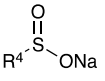
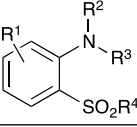
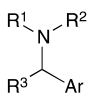
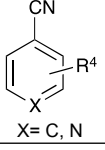
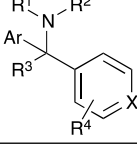

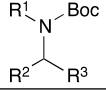
			296
ROH			296
	Umemoto's reagent		297
R ¹ OH			298
	O ₂		299-303
R ¹ OH	 and CO (80 atm)		304
	TiO ₂ (P25)		305
			306
	Phth-SCF ₃		307
ArOTf	CO ₂	ArCO ₂ H	308
			309
	BocN=NBoc		310
	BocN=NBoc		311
			312

			313
R ¹ OH			314
			315

X = Cl, Br, I

AMINES, AMIDES, AND ANALOGUES	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
			319
			320
			321
	O ₂		322
	NaCN or TsCN		323, 324
			325
R ¹ NH ₂			326

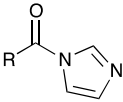
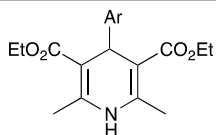

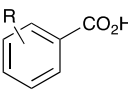
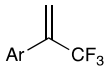
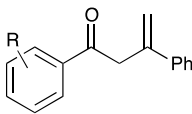
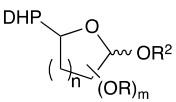
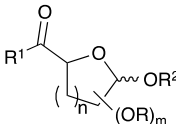
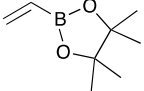
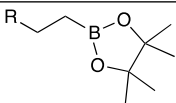
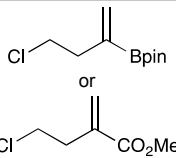
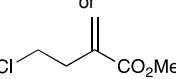
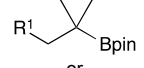
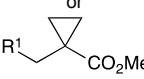
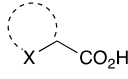
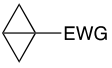
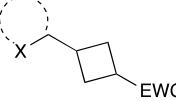
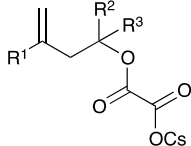
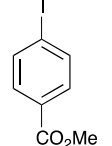
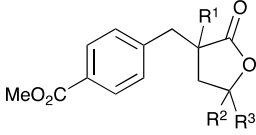
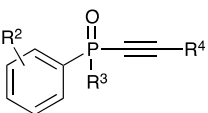
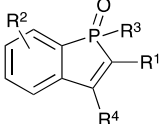
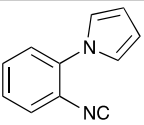
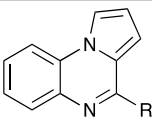
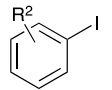
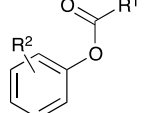
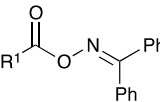
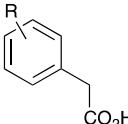
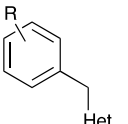
R² = *p*-CF₃C₆H₄ and CO

$R'NH_2$	 <p>and Me O N N O MTAD</p>		327
	B_2cat_2 then pinacol		328, 329
			330
			331
			332
			333
	Togni's reagent		334
			335
	 <p>X= C, N</p>		336
	R^3Br $R^3 = \text{alkyl}$		337

			338
			339
	-----		340
			341
	-----		342
Drugs, e.g. 	D ₂ O or T ₂ O	Deuterated or tritiated drug	343

CARBOXYLIC ACIDS AND ESTER DERIVATIVES	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
	H-donor		345
	-----		346, 348
			349, 350

			351
			352-354
	R^3X X = Cl, Br, I		355
R^1CO_2H			356
	-----		357
	R^2NH_2		358
			359
			360
	-----		361
R^1CO_2H	BocN=NBoc		362
	TMSCN		363
	$PPh_3, (p\text{-OMeC}_6\text{H}_4)_2\text{S}_2$		364
	D_2O		365
			366
R^1CO_2H	R^2BF_3K	R^1COR^2	367

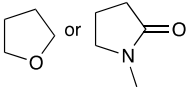
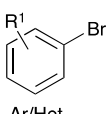
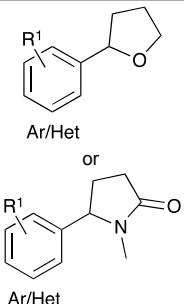

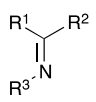
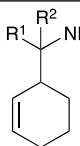
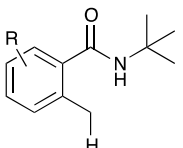
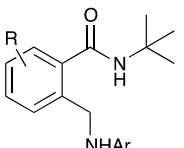
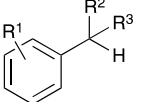
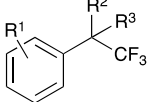

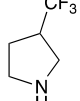

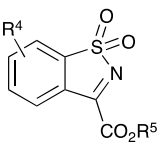
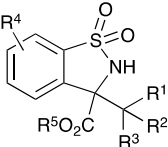

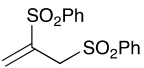
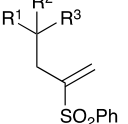

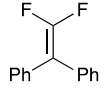
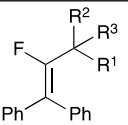
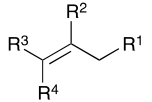
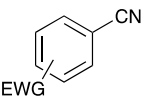
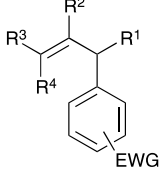
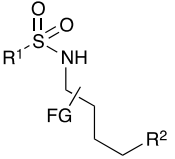
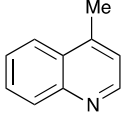
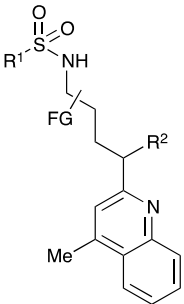
			368
			369
R ¹ CO ₂ H			370
RCO ₂ H	Togni's reagent	RCF ₃	371
RCO ₂ H	[Me ₄ N][SeCF ₃]	RSeCF ₃	372
RCO ₂ NPhth	B ₂ cat ₂ then pinacol or B ₂ pin ₂	RBpin	373, 374
RCO ₂ H			375
RCO ₂ H	 or 	 or 	376
			377
			378
R ¹ CO ₂ NPhth			379
R ¹ CO ₂ H			380
R ¹ CO ₂ H			381
R ¹ CO ₂ NPhth	R ² OH R ² = alkyl, aryl	R ¹ OR ²	382, 383
R ¹ CO ₂ NPhth	PhCOSH	R ¹ SBz	384
	CDCl ₃	R ¹ D	385
	H-Het		386

			387
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CARBONYL COMPOUNDS	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
			392
	TIPS-C≡C-BI BI= benziodoxolone		393
	ArBr		394
			395
			396
	PhthSCF ₃		397
	NH ₄ SCN		398
			399
			400
			401

			402
			403
			404
			405
			406
			407
			408
			409

C(sp ³)-H BONDS	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
			411, 412
			413

			414
			415
	ArNH ₂		416
	Grushin's reagent		417
	Togni's reagent II		418
			419
			420
			421
			422, 423
			424

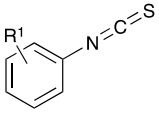

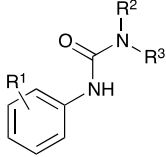
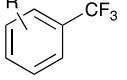
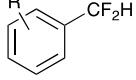
	-----		425
	-----		426
			427
	BIOH (Benzoiodoxole)		428
	H ₂ O		429
	NH ₂ Ts		430
	 or LiCl or Bu ₄ N ⁺ Br		431
			432
	<i>t</i> BuOCOCI		433
	MeOH		434
	HCl, O ₂		435
	NaI		436
	CF ₃ (CF ₂) ₂ CF ₂ I or Et ₂ CO ₂ CBr ₃ or CNCCl ₃		437

	R^4S-SR^4		438
	R^5S-SR^5		439
RH	PhthSCF ₃	RSCF ₃	440, 441
RH			442-444

Further conversion to: C-C, C-O, C-N, and C-S bonds

MISCELLANEOUS	REACTION PARTNER(S)	PRODUCT(S)	REFERENCE(S)
	$R^3O-P(OR^3)_3$		445
			446
	 and 		447
$R^1-C(=O)-H$	$R^3-N(R^2)-NH_2$ and $F-C(=O)-OEt$ Br		448
R^1CO_2H or R^3-NH-R^2	$Ar-C(=N_2)-CO_2Me$	$Ar-CH_2-CO_2Me$ or $Ar-CH(R^2)-N(R^3)-CO_2Me$	449
$R^1-B(pin)^- Li^+$ 			450
	O ₂		451, 452

			453
			454
	-----		455
			456
			457
	NuH Nu= O and N nucleophiles		458
			459
	CF3SO2Na		460
			461
	-----		462
	R1SH		463
RSH or RSSR	D2O	RD	464
	R4SH		465
	-----		466

			467
	Hydrogen atom donor		468
Amino acids and peptides	-----	-----	469-490
Photocleavable protecting groups	-----	-----	491-495
Nucleosides and DELs	-----	-----	496-501