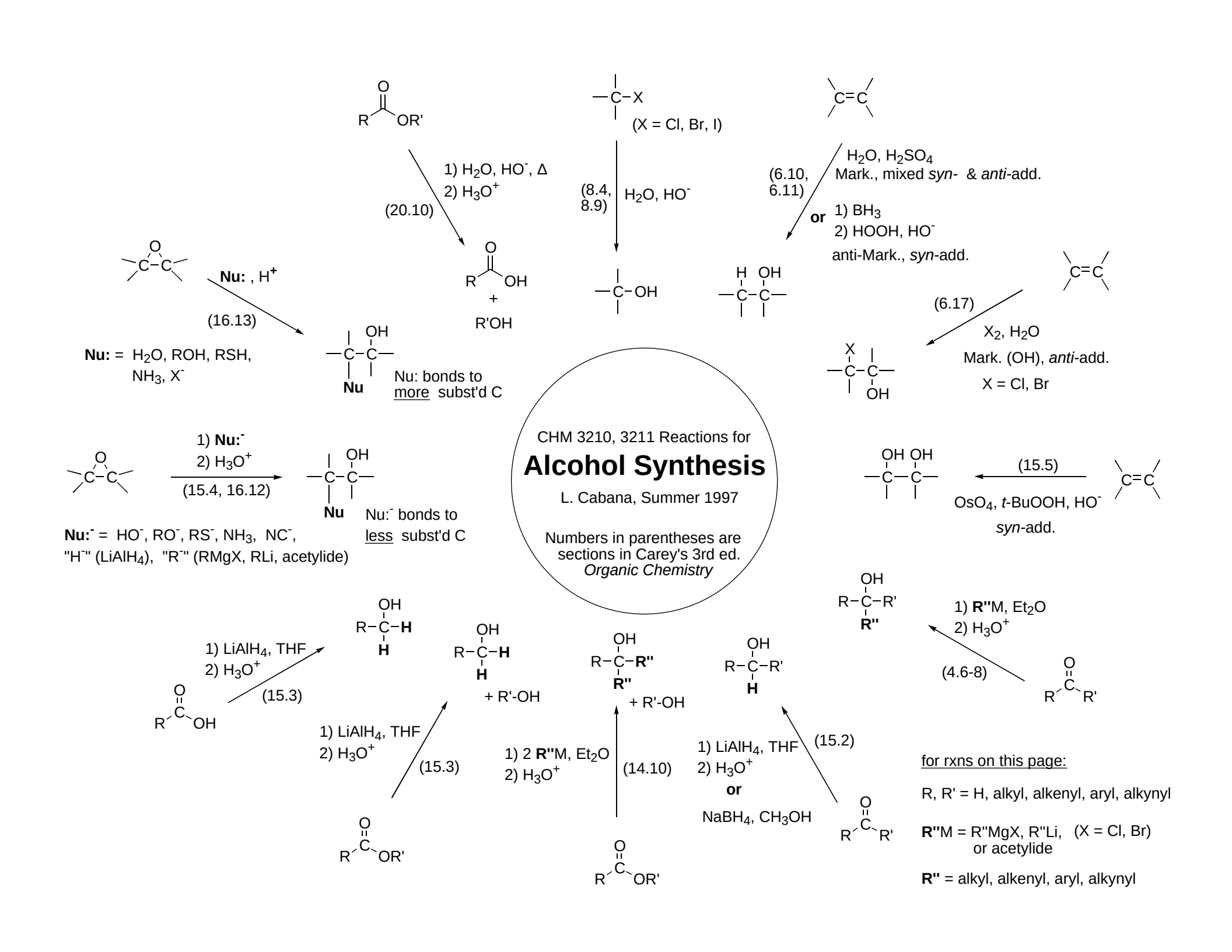
CHM 3210, 3211 Reactions for
Alcohol Synthesis
L. Cabana, Summer 1997
Numbers in parentheses are sections in Carey's 3rd ed. Organic Chemistry
(X = Cl, Br, I)
1) H2O, HO-, Δ
2) H3O+
(20.10)
(8.4, 8.9)
H2O, HO-
(6.10, 6.11)
H2O, H2SO4
Mark., mixed syn- & anti-add.
or
1) BH3
2) HOOH, HO-
anti-Mark., syn-add.
Nu: , H+
(16.13)
Nu: = H2O, ROH, RSH, NH3, X-
Nu: bonds to more subst'd C
+ R'OH
(6.17)
X2, H2O
Mark. (OH), anti-add.
X = Cl, Br
1) Nu:-
2) H3O+
(15.4, 16.12)
Nu:- = HO-, RO-, RS-, NH3, NC-, "H-" (LiAlH4), "R-" (RMgX, RLi, acetylide)
Nu:- bonds to less subst'd C
(15.5)
OsO4, t-BuOOH, HO-
syn-add.
1) LiAlH4, THF
2) H3O+
(15.3)
+ R'-OH
1) 2 R''M, Et2O
2) H3O+
(14.10)
1) LiAlH4, THF
2) H3O+
or
NaBH4, CH3OH
(15.2)
1) R''M, Et2O
2) H3O+
(4.6-8)
for rxns on this page:
R, R' = H, alkyl, alkenyl, aryl, alkynyl
R''M = R''MgX, R''Li, (X = Cl, Br) or acetylide
R'' = alkyl, alkenyl, aryl, alkynyl