1) RMgCl, THF
2) BnBr, K2CO3, DMF
6
7a (58%) R = methyl
7b (63%) R = vinyl
7c (81%) R = allyl
7d (61%) R = butyl
7e (68%) R = phenyl
1) TFAA
2) aq. NaOH
8a (75%) R = methyl
8b (70%) R = vinyl
8c (56%) R = allyl
8d (60%) R = butyl
8e (65%) R = phenyl
N-benzylation
NHAc anchimeric assistance
RMgCl
1) H2, Pd black, 10% Pd/C, MeOH, HCl 1M
2) Amberlite resin
9a (90%) R = methyl
9b (88%) R = ethyl
9c (85%) R = propyl
9d (89%) R = butyl
9e (quant.) R = phenyl