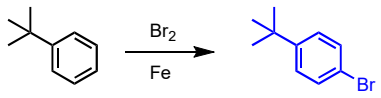
ELECTROPHILIC AROMATIC SUBSTITUTION

Predict the products of the following reactions.

A

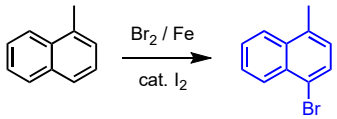


75% yield

rxn from JACS, 1944, 66, 914

B

(the I_2 makes Br_2 more reactive, you may ignore it for mechanism)

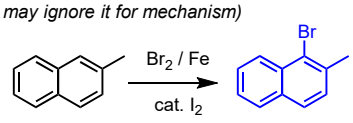


94% yield

rxn from JOC. 2016, 81, 8544

C

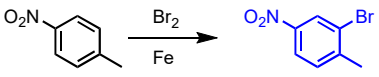
(the I_2 makes Br_2 more reactive, you may ignore it for mechanism)



83% yield

rxn from JOC. 2016, 81, 8544

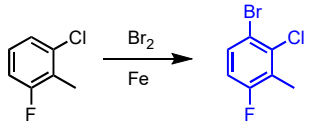
D



66% yield

rxn from JPC A 2017, 121, 5110

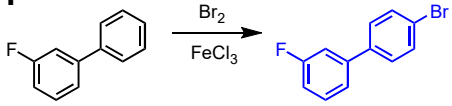
E



98% yield

rxn from JMC, 2009, 52, 7186

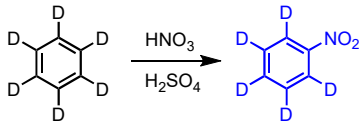
F



>80% yield

rxn from Nature, 2019 567 223

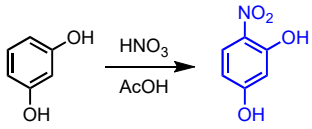
G



96% yield

rxn from CEJ 2019 25 10668

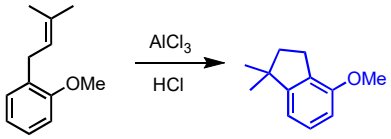
H



75% yield

rxn from TL 2006 47 4933

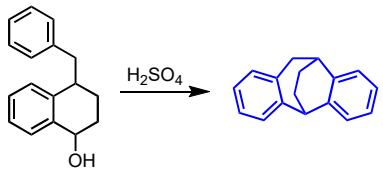
I



60% yield

rxn from Bull. SOC. Chim. Belg. 1981 90 847

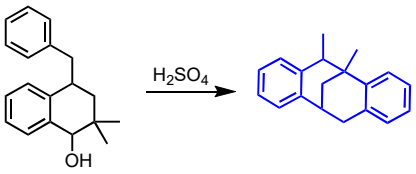
J



85% yield

rxn from JOC, 1973, 38, 1909

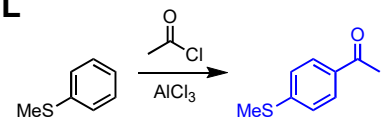
K



70% yield

rxn from JOC, 1973, 38, 1909

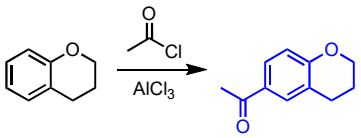
L



79% yield

rxn from Sulfur Lett 1991, 12, 123

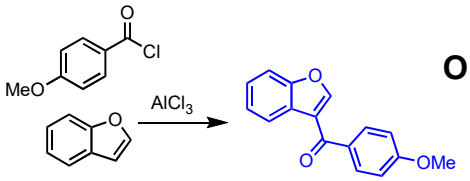
M



85% yield

rxn from ACIE, 2019, 58, 15386

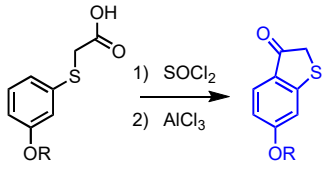
N



85% yield

rxn from Bio Med Chem. 2018, 26, 2984

O

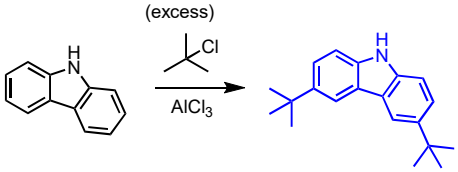


R = C_6H_{13}

62% yield

rxn from TL 1994 35 7549

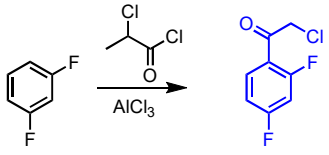
P



72% yield

rxn from JPC C, 2017, 121, 23618

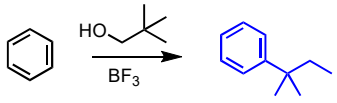
Q



91% yield

rxn from Bio Med Chem Lett 2012 22 4887

R



96% yield

rxn from JACS 1959 81 1110