

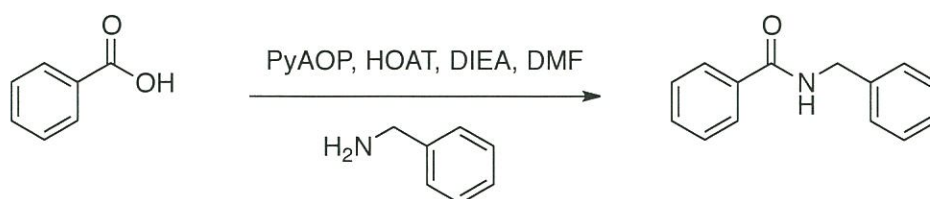
Organic Chemistry

CHM 224

Aldehyde and Ketone Take-Home Problem Set

Name: Key / solution

One way to form amides from carboxylic acids is to “couple” a carboxylic acid and amine by using a “coupling reagent” and other reagents.



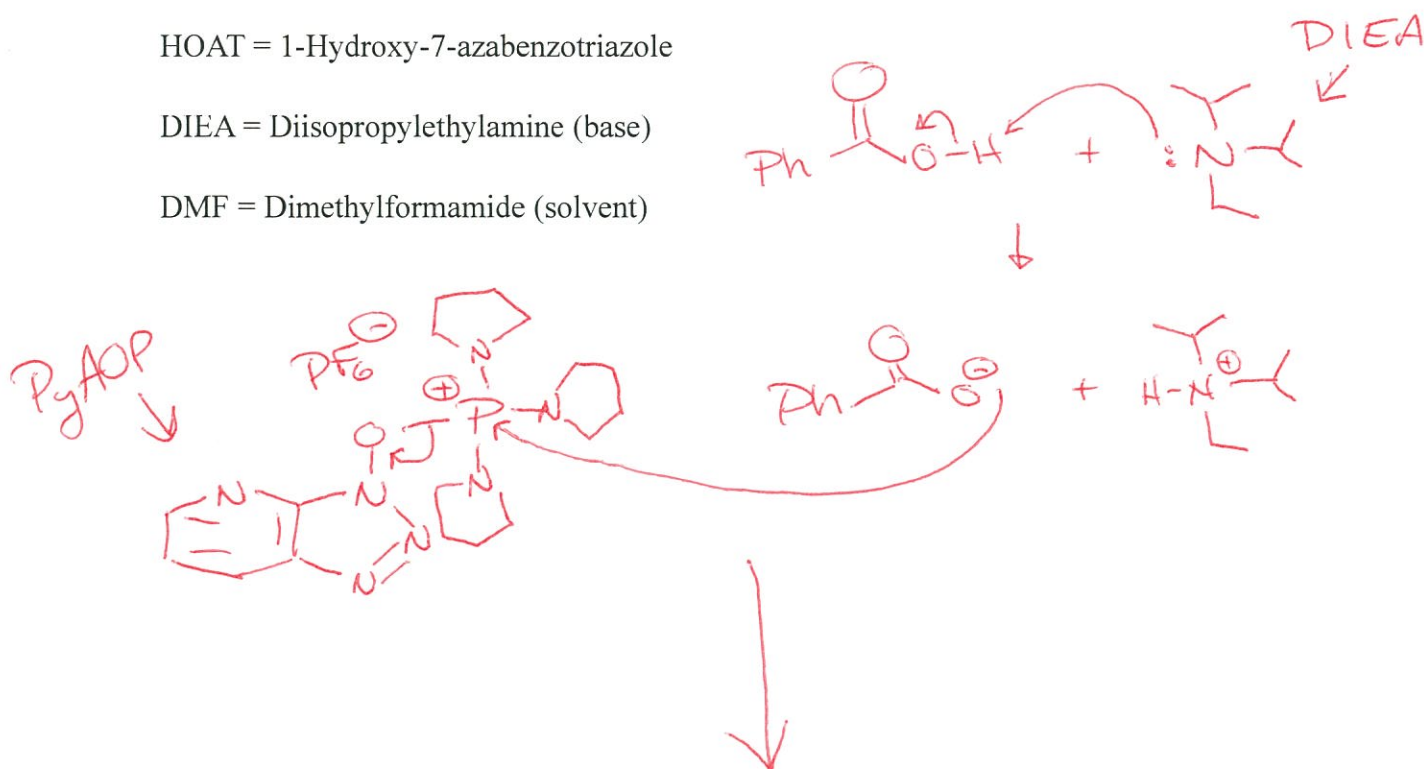
Using the internet as a guide, research the structures of PyAOP, HOAT and DIEA and the coupling mechanism. Draw a stepwise arrow-pushing mechanism that accounts for the transformation shown above.

PyAOP = (3-Hydroxy-3H-1,2,3-triazolo[4,5-b]pyridinato-O)tri-1-pyrrolidinyl-phosphorus hexafluorophosphate

HOAT = 1-Hydroxy-7-azabenzotriazole

DIEA = Diisopropylethylamine (base)

DMF = Dimethylformamide (solvent)



Cont'd.

Standard Nucleophilic acyl substitution
2-step

