Total Synthesis of the Akuammiline Alkaloid Picrinine

Smith, J. M.; Moreno, J.; Boal, B. W.; and Garg, N.K.

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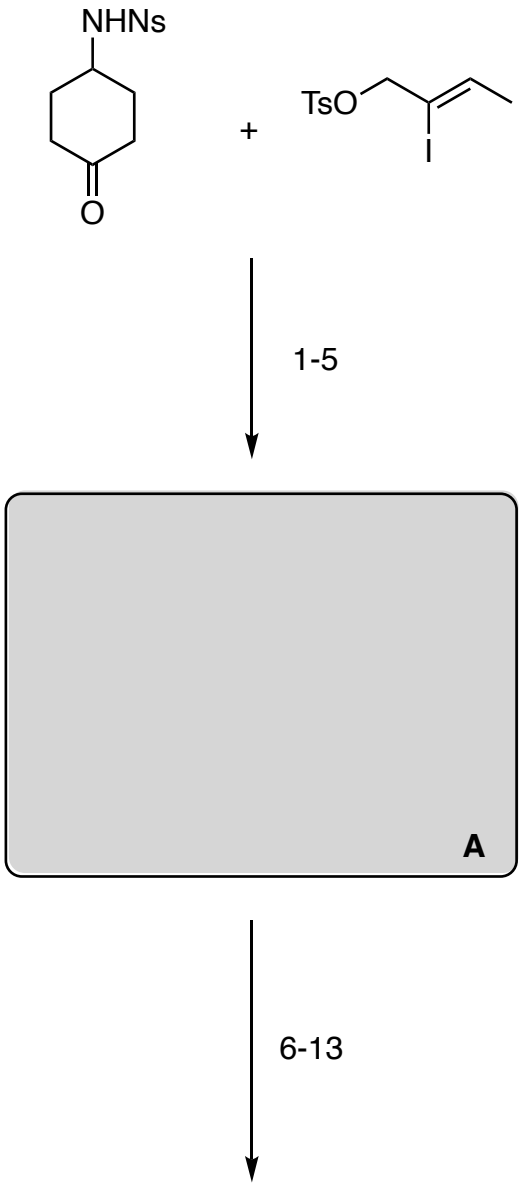
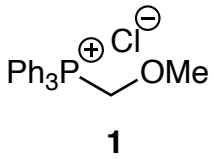


1) Cs_2CO_3
2) $PdCl_2(dppf)$, K_2CO_3
3) IBX, NMO
4) $NaBO_3 \cdot H_2O$
5) **1**, KO*t*Bu



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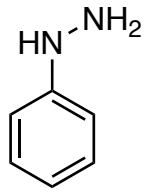

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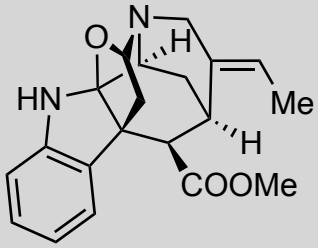
6) Bu_3SnH, $Pd(PPh_3)_4$, $ZnCl_2$
7) Ph_3PMeBr, KO*t*Bu
8) DMP, $NaHCO_3$
9) LHMDS, DMPU *then* allyl iodide
10) Hoveyda-Grubbs II (4 mol %)
11) OsO_4(cat.), NMO
12) Triphosgene, pyridine
13) **2**, TFA

3) Structure of IBX?
4) Hint: $NaBO_3$ in water has similar reactivity to H_2O_2
5 & 7) Name of reaction?

10) Structure of Hoveyda-Grubbs II?

13) Name and mechanism of rxn?

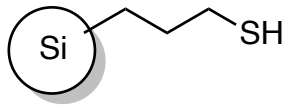


Picrinine

B

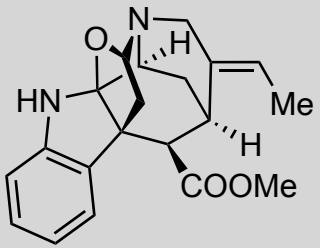
14-18

14) $NaOH$, H_2O
15) $NaIO_4$, H_2O
16) $NaClO_2$, NaH_2PO_4, 2-methyl-2-butene
17) Me_3SiCHN_2, MeOH
18) SiliaMetS® Thiol resin(structure below), Cs_2CO_3



16) Name of reaction?

18) Hint: Deprotection and cyclization



Picrinine