Total Synthesis of (+)-Hosieine A

Significance: The authors report a nine-step total synthesis of enantioenriched (+)-hosieine A. Natural products of the hosieine family were isolated from O. hosiei and show nanomolar activity against the nicotinic acetylcholine receptors (nAChRs). For a previous synthesis of (–)-hosieine A, see: J. Ouyang, R. Yan, X. Mi, R. Hong Angew. Chem. Int. Ed. 2015, 54, 10940.

Comment: The synthesis relied on a gold-catalyzed, enantioconvergent Rautenstrauch rearrangement that afforded enone K. After base-induced Michael addition to form L and reductive amination, spontaneous lactamization took place to give N. The lactam was reduced eventually with borane to give enantioenriched (+)-hosieine A.

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