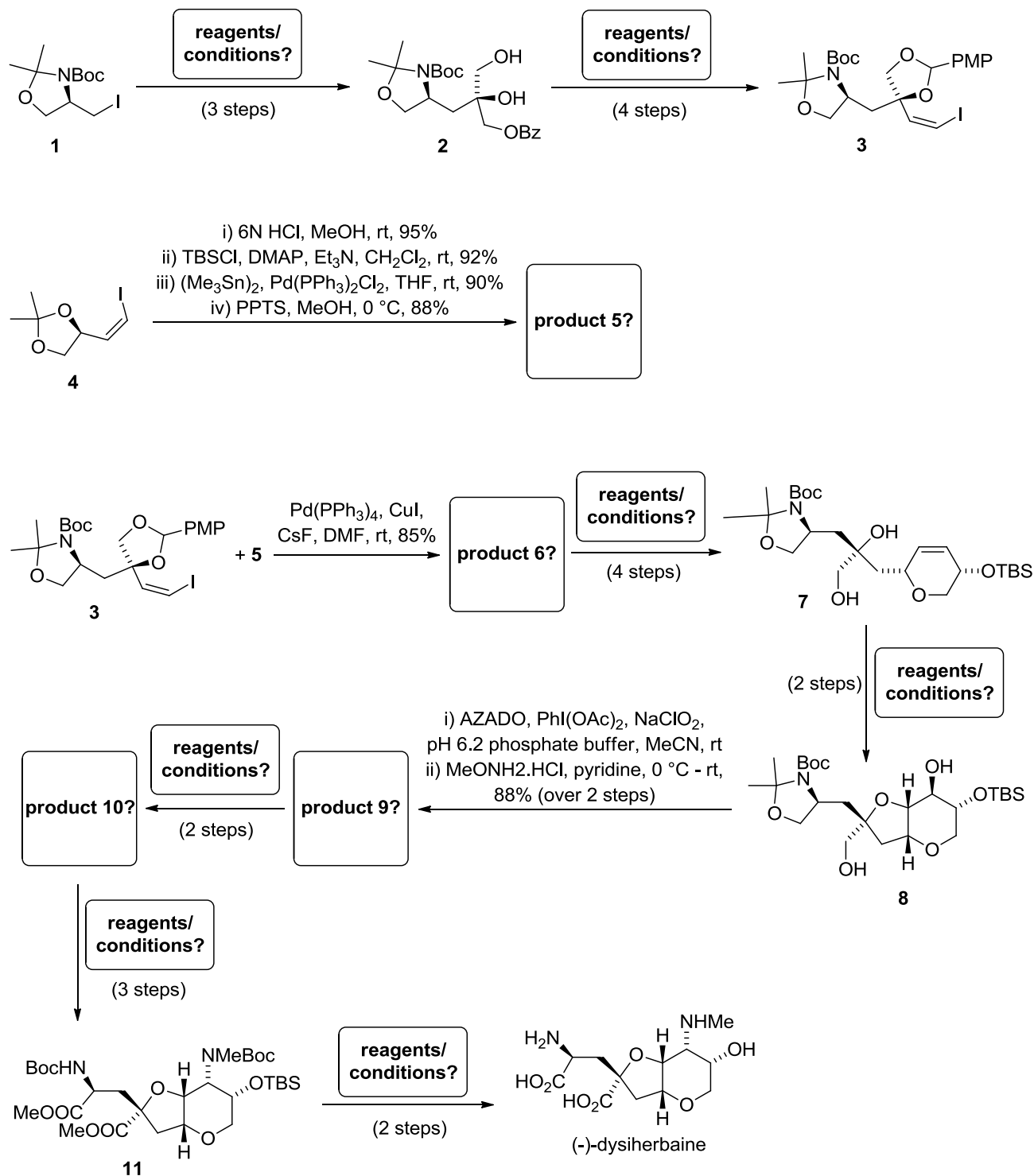


Spivey Group Problem Session – Total Synthesis of (-)-Dysiherbaine

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(-)-Dysiherbaine was originally isolated from extracts of marine sponge. It exhibits potent convulsant activity among excitatory amino acids and since it induces epilepsy-like seizures in mice it could be considered as a potential surrogate of the current seizurogenic drugs. A total synthesis of (-)-dysiherbaine was recently reported and is outlined in the scheme below. Please provide reagents and conditions where indicated and mechanisms for all steps.



Boc: *tert*-butoxycarbonyl, PMP: *p*-methoxyphenyl, TBSCl: *tert*-butyldimethylsilyl chloride, DMAP: 4-dimethylaminopyridine, THF: tetrahydrofuran, PPTS: pyridinium *p*-toluenesulfonate, DMF: *N,N*-dimethylformamide, AZADO: 2-azaadamantane *N*-oxyl