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Invited Lecture

New short syntheses of (D-homo) steroid skeletons

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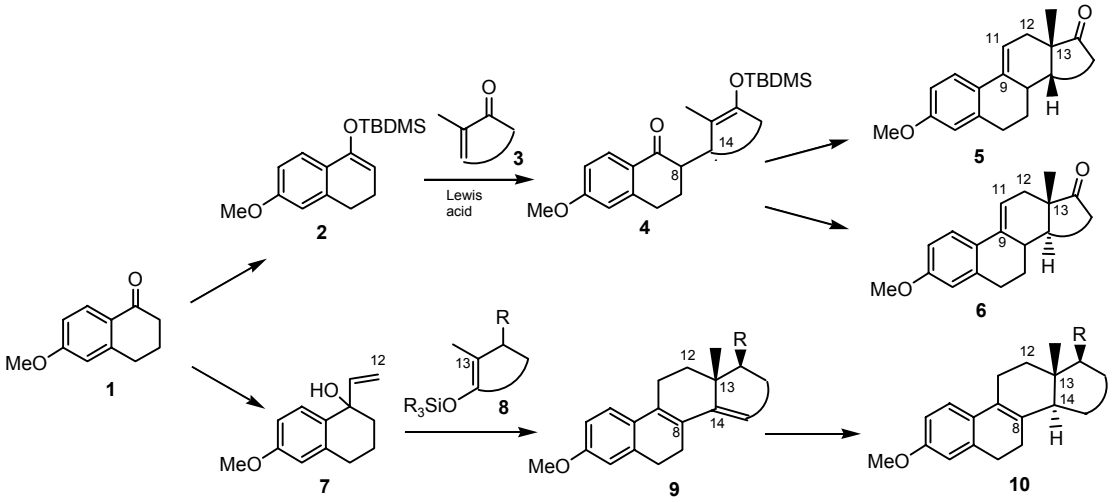
New, efficient procedures have been developed for syntheses of C,D *cis* and C,D *trans* coupled steroid and D-homo steroid skeletons. A Mukaiyama reaction between silyl enol ether **2** and enones **3**, with transfer of the silyl group to the enol of the adduct, gave a second silyl enol ether **4** with formation of the C8-C14 bond as the first one. Starting from this intermediate, ring C of the steroid skeleton has been constructed using Torgov type reactions of carbocations with silyl enol ethers as key transformation.



A second synthesis of C17 substituted C,D *trans* coupled (D-homo) steroid skeletons **10** has been developed using a similar addition of a carbocation, generated from the Torgov reagent **7**, to silyl enol ether containing ring D precursors **8**. The adducts have been cyclized by treatment with acid, now under formation of the C8-C14 bond as the last one. The double bonds in the cyclized products can be reduced to all trans steroid skeletons. A chiral five membered silyl enol ether containing ring D precursor **8** has been synthesized from carvone, and applied as starting compound in the synthesis of a chiral C17 functionalized steroid.