OR08 – Sulfoxide as Handful Tool for Stereoselective C–H Activation

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Considering the importance of chiral molecules, a continuous search for original strategies for asymmetric synthesis presents a great scientific challenge. A direct functionalization of C–H bonds opens new avenues in this field as now unprecedented retrosynthetic disconnections may be envisioned to construct stereogenic scaffolds from simple starting materials in a step- and waste-economic manner. Recently the potential of the chiral sulfoxide to play the role of both, a chiral auxiliary and a traceless directing group, in C–H activation reactions, has been evidenced. The sulfoxide-directed asymmetric C–H functionalization enabled very efficient and highly stereoselective synthesis of various axially chiral biaryls via direct C–C, C–O, and C–X couplings. The synthetic utility of this approach could by illustrated by performing a straightforward synthesis of biologically relevant Steganone scaffold. The latest results shows also that chiral sulfoxide directing group is also a promising tool to allow challenging, asymmetric C(sp^3)-H functionalization.

References
4. unpublished results.