Photocatalytic deaminative benzylation and alkylation of tetrahydroisoquinolines with *N*-alkylpyrydinium salts

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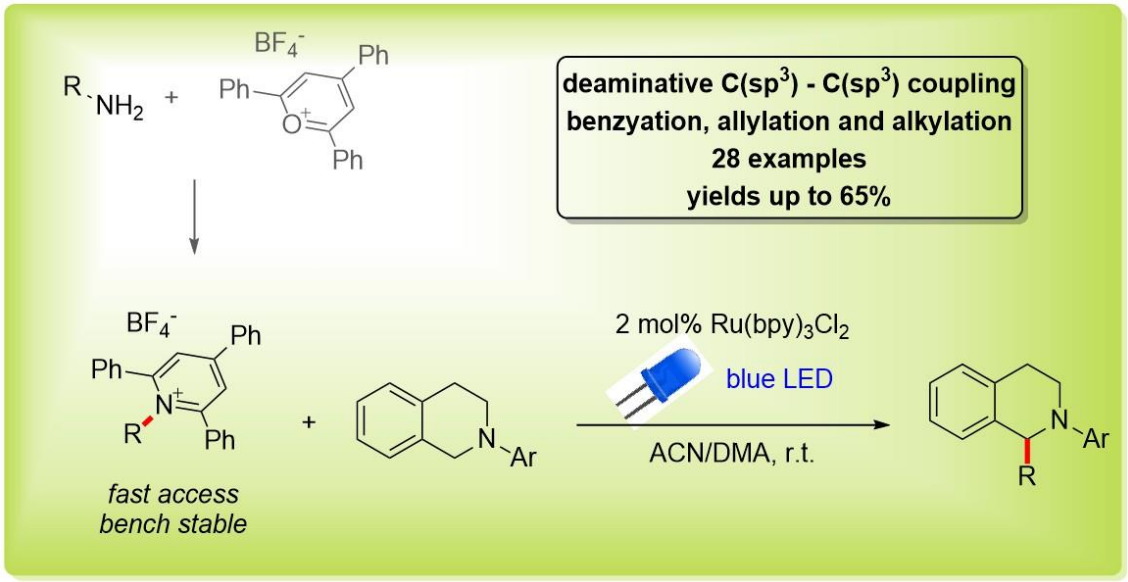
A ruthenium-catalyzed photoredox coupling of substituted N-aryltetrahydroisoquinolines (THIQs) and different pyridinium salts was successfully developed to give fast access to 1-benzyl-THIQs.[1] The THIQ moiety is of special interest due to its presence in several different natural products.[2] Hence, also photoredox catalysis methods were investigating on this scaffold previously, to introduce various moieties.[3],[4] In this contribution, we disclose a C(sp^3)–H alkylation, which proceeds under mild conditions and the applied pyridinium salts for radical generation are bench-stable over long periods of time. Besides substituted benzyl groups, secondary alkyl and allyl groups were also successfully introduced via the same method. Additionally, the typically applied N-phenyl group in the THIQ substrate could be replaced by the cleavable p-methoxyphenyl (PMP) group and successful N-deprotection was demonstrated. Hence, this method can be used for the synthesis of THIQ-containing natural products and bioactive substances, which are typically lacking an N-phenyl group.



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