# Earth-abundant metal catalysis –
cross-coupling reactions and aryl migrations

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The development of eco-compatible and resource-economic synthetic pathways has become a necessity to access valuable compounds. In this context, earth-abundant metal complexes (Fe, Co, Cu, Ni) emerged as an attractive alternative to palladium catalysts, especially for C-C bond formation.[1] Beside their natural abundance, iron, cobalt or copper catalysts exhibit a complementary reactivity compared to other transition metal catalysts, broadening the substrate scope of cross-coupling reactions and offering new synthetic opportunities.[2] The power of cobalt- and copper-catalyzed cross-coupling reactions between alkyl halides and Grignard reagents will be illustrated. Simple, available and cost-effective catalytic systems promote efficient and chemoselective transformations allowing the synthesis of attractive building blocks including strained cycles[3]. The radical nature of the cobalt-catalyzed process is exploited in an organometallic-free arylation of α-halo amides proceeding through a desulfonylative 1,4-aryl migration.[4]
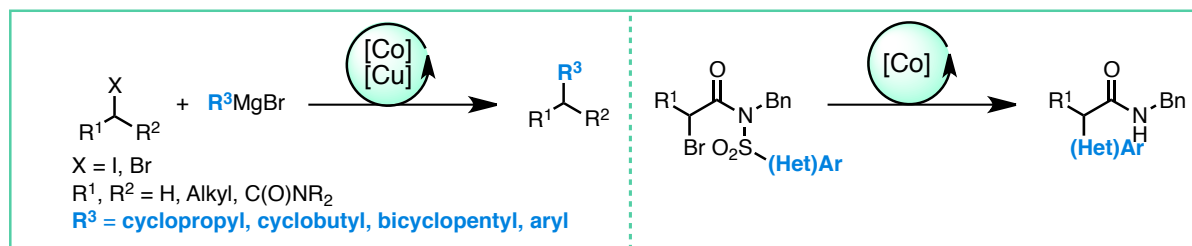
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