

Visible-Light-Mediated Anti-Markovnikov Hydroamination of Unactivated Alkenes via Radical–Polar Crossover

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Abstract: *Visible-light photoredox catalysis has emerged as a powerful platform for achieving anti-Markovnikov hydroamination of unactivated alkenes under mild conditions. Traditional ionic pathways favor Markovnikov selectivity due to carbocation stability; however, radical-mediated strategies combined with radical–polar crossover (RPC) processes enable reversal of regioselectivity. In this review, we summarize key developments in visible-light-driven hydroamination reactions, mechanistic pathways involving nitrogen-centered radicals, hydrogen atom transfer (HAT), and photocatalyst-driven single electron transfer (SET). The scope, limitations, and synthetic utility of these transformations are discussed with emphasis on anti-Markovnikov selectivity in unactivated alkene systems*

Keywords: Visible-light photoredox catalysis, Anti-Markovnikov hydroamination, Radical–polar crossover (RPC), Unactivated alkenes, Nitrogen-centered radicals, Regioselectivity