Fragment Coupling Using Bimolecular Free-Radical Reactions

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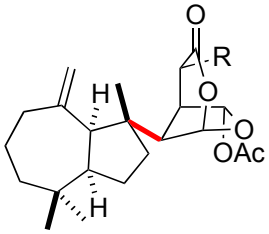
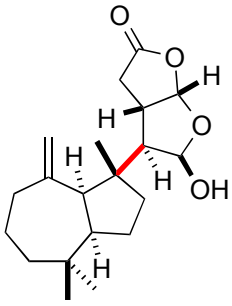
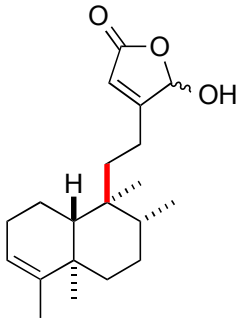
Convergent synthesis strategies are fundamental to the efficient preparation of complex organic molecules. As a result, reactions that achieve the high-yielding union of polyfunctional fragments have particular importance in the preparation of structurally intricate organic molecules. Especially demanding are fragment coupling reactions that form sp^3-sp^3 sigma bonds and two stereocenters. When the two stereocenters reside in different rings and at least one of these stereocenters is quaternary, the challenge is enhanced substantially. This lecture will discuss the previously under appreciated utility of bimolecular reactions of free radicals to couple structurally intricate fragments.



macfarlandin E (R = OAc)
aplyviolene (R = H)



cheloviolene A



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