

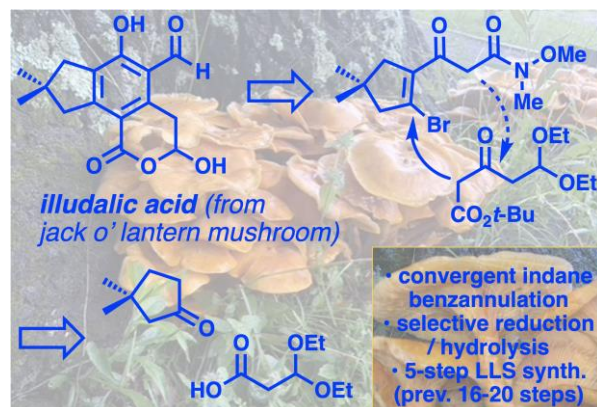


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### Benzannulation reactions for synthetic and medicinal chemistry

**ABSTRACT:** Highly substituted benzenes — like the penta- or hexasubstituted benzene cores of the illudalane sesquiterpenes — are underrepresented in medicinal chemistry and present long-standing challenges to chemical synthesis. Traditional synthetic approaches feature serial aromatic substitution, which becomes increasingly cumbersome with increasing substitution. Despite these challenges, interest in the illudalanes has surged in recent years, highlighted by the discovery that illudalic acid (from the toxic jack o'lantern mushroom *Omphalotus illudens*) is a potent and selective inhibitor of the LAR family of protein tyrosine phosphatases (PTPs). We will describe benzannulation methodologies and convergent syntheses of illudalic acid and illudalane-type goal structures aimed at advancing synthetic and medicinal chemistry.



**BIO:** Greg Dudley is the Eberly Family Distinguished Professor of Chemistry and Department Chair of the C. Eugene Bennett Department of Chemistry at West Virginia University in Morgantown, WV. Prof Dudley received a B.A. from FSU in 1995 and a Ph.D. from MIT in 2000 under the direction of Prof. Rick Danheiser. After receiving an NIH Postdoctoral Fellowship to work with Prof. Samuel Danishefsky at the Sloan–Kettering Institute for Cancer Research, he returned to FSU as an Assistant Professor in 2002. He was promoted to Associate Professor in 2008 and Full Professor in 2015 before moving to WVU in July 2016. His research efforts have resulted in over 100 publications, 150 presentations, and multiple patents. The current mission of his research program is to impact the drug discovery and development processes by contributing fundamental knowledge in organic chemistry, including new strategies, tactics, and research tools for best practices in organic synthesis. He is also active in science policy consulting, including working with White House attorneys on a clemency case and the Sentencing Commission on the 2018 US Sentencing Guidelines.