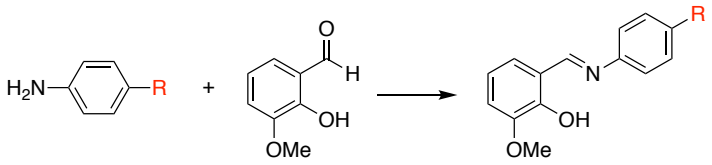
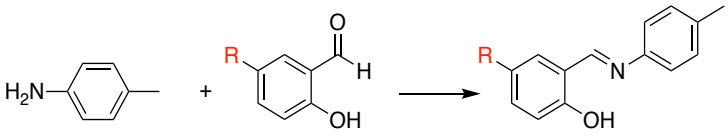
Imine Library Synthesis via Solvent-Free Reactions



R= Cl, Br, Ph, H, Me, OH, etc.



R= Cl, Br, H, Ph, Me, OH, etc.

We have initiated studies to expand the scope of Touchette's[1] solvent-free imine formation reaction between *ortho*-vanillin and *para*-toluidine. These reactions are cost efficient and exhibit green chemistry properties.[2] The primary goal of this project is to synthesize and characterize a variety of imines. We are taking two related approaches to this study: imine synthesis via *para*-toluidine and a library of substituted salicylaldehydes or imine synthesis via *ortho*-vanillin and a library of substituted anilines. Previous studies on structurally similar imine ligands—and their bidentate metal complexes—have revealed multiple biological activities for this class of molecules, including bactericidal properties.[3] We hope to further explore the antibacterial properties of new all compounds produced from our synthetic work. Future studies also include reductive amination of the synthesized imines.

Student Researchers: **Samantha Gillis and Joy Thames**
Faculty Advisor: **Dr. Steven Merwin Kennedy**

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[1] *J. Chem. Ed.* **2006**, 83, 6
[2] *E-Journal of Chemistry* **2010**, 566, 7
[3] *Chinese J. Struct. Chem.* **2007**, 1395, 12