

Research in the Honeychuck Group

Quinolines as a class have been shown to exhibit extensive biological activity, including bacteriostatic, amebacidal, antimalarial, and antitumor properties. The interest of the Honeychuck group in quinolines stems from their production by the opportunistic pathogen *Pseudomonas aeruginosa*. We have synthesized 2-alkyl-4-hydroxyquinolines made by the bacterium and isolated by the Royt group of GMU's Dept. of Molecular and Microbiology, and several analogs, characterizing them via NMR, IR, and mass spectrometry. The long term goals of the project are to determine which compounds are bacteriostatic against various classes of bacteria, and to determine the function of the *Pseudomonas*-derived compounds in *Pseudomonas* itself.

Publications on this subject:

1. Royt, P.W.; Honeychuck, R.V.; Pant, R.R.; Rogers, M.; Asher, L.V.; Lloyd, J.R.; Carlos, W.E.; Belkin, H.E.; Patwardhan, S. "Iron- and 4-Hydroxy-2-alkylquinoline-containing Periplasmic Inclusion Bodies of *Pseudomonas aeruginosa*: A Chemical Analysis," *Bioorg. Chem.* **2007**, *35*, 175-188.
2. Royt, P.W.; Honeychuck, R.V.; Ravich, V.; Ponnaluri, P.; Pannell, L.K.; Buyer, J.S.; Chandhoke, V.; Stalick, W.M; DeSesso, L.C.; Donohue, S.; Ghei, R.; Relyea, J.D.; Ruiz, R. "4-Hydroxy-2-nonylquinoline: A Novel Iron Chelator Isolated from a Bacterial Cell Membrane," *Bioorg. Chem.* **2001**, *29*, 387-397.