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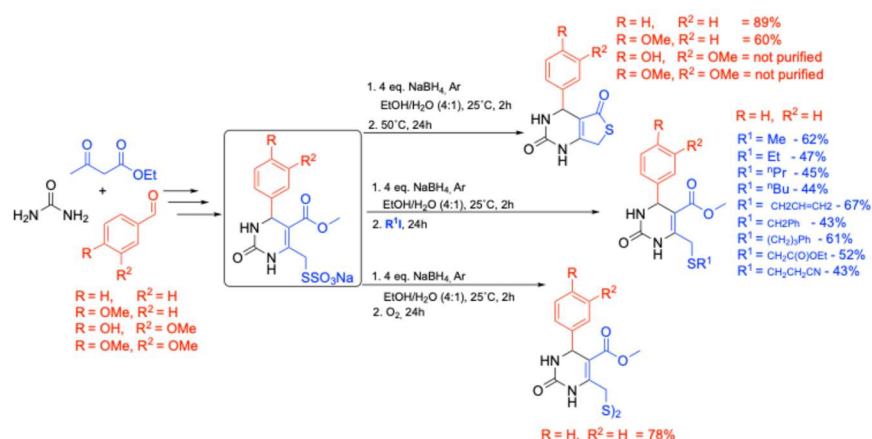
Bunte salts as versatile precursors to sulfur compounds: unsymmetrical sulfides, disulfides, thiolactonesFrancisco A. S. Xavier (PG),¹ Vitor E. S. Zerger (PG),¹ Fernando R. Xavier (PQ), Rogério A. Gariani (PQ).

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¹Departamento de Química, Universidade do Estado de Santa Catarina, SC, Joinville, CEP 89219-710, Brazil; do Estado de Santa CatarinaPalavras Chave: *Organochalcogen; Dihydropyrimidinone; Bunte salts; Green chemistry; Thiolactones.***Highlights**Bunte salts offer sustainable, low-odor routes to sulfur derivatives; mild NaBH₄ reduction furnishes thioethers and thiolactones that can serve as pharmacologically relevant scaffolds.**Resumo/Abstract**

The development of sustainable methods for synthesizing sulfur-containing organic compounds is gaining prominence in the chemical industry. Bunte salts (S-alkyl thiosulfates) serve as precursors to sulfides, offering a viable alternative to conventional organometallic routes [1]. Here we report the synthesis of sulfides, disulfides, and thiolactones on the dihydropyrimidinone (DHPM) scaffold; given the biological relevance of DHPMs, the resulting compounds may exhibit biological activity.

Fig. 1. General route to sulfides, disulfides, and thiolactones from Bunte salts.

During optimization, we evaluated the reducing agent, stoichiometry, temperature, solvent, and workup. All products were characterized by NMR and high-resolution mass spectrometry (HRMS). The route via Bunte salts proved promising, eliminating the need for organometallic reagents. Isolated yields were 43–67% for sulfides; 78% for disulfides ($n = 1$); and 60–89% for thiolactones (conditions still being optimized).[1] ZERGER, Vitor Emanuel Simette. *Síntese de sulfetos dissimétricos de dihidropirimidinona (DHPM) a partir de sais de bunte: um estudo metodológico*. 2025. Dissertação (Pós-Graduação em Química) - Udesc, Joinville, 2025.**Agradecimentos/Acknowledgments**

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