

A CONCISE SYNTHESIS OF AN L-ALTRURONIC ACID GLYCOSYL DONOR

Ajay Sharma S, Nicholas W. See, Elizabeth H. Krenske, Vito Ferro

School of Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, Queensland 4072, Australia a.sharmasridhar@uq.edu.au

L-Altruronic acid (L-AltA) is a rare hexose that manifests in the capsular polysaccharides of numerous pathogenic bacteria, including Enterococcus faecium. Encouraging evidence has been provided for the efficacy of glycoconjugates as vaccine candidates against E. faecium. Of those examined, the highest-performing structure contained L-AltA as a signature sugar. However, further investigation in this area has been limited by poor synthetic access to appropriate L-AltA building blocks. We now report the straightforward preparation of a glycosyl donor-functionalized derivative of L-AltA from inexpensive starting materials. Central to this synthesis is the fluorine-directed C-5 epimerization, which has previously been instrumental in accessing other rare L-hexoses [1-3].

References:

- 1. N.W. See, N. Wimmer, E.H. Krenske, V. Ferro, Eur. J. Org. Chem., 2021, 1575-1584.
- 2. N.W. See, G.K. Pierens, E.H. Krenske, V. Ferro, Synthesis, 2024, 56, 966-974.
- 3. N.W. See, N. Wimmer, G. Zhang, E.H. Krenske, V. Ferro, J. Org. Chem., 2024, 89, 17941-17949.