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Coordination Polymers featuring Dibenzoyltartaric and Ditoluoyltartaric Acid: A different approach to a popular compound.

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The two tartaric acid derivatives dibenzoyltartaric acid (DBTA) and di-*para*-toluoyltartaric acid (DPTTA) are common compounds in organic chemistry and pharmaceutical science, where they mostly function as derivatisation agents or as chiral templates. There are currently about 250 crystal structures featuring either of the acids deposited in the CCDC [1]. While the compounds are decent chelating ligands with the ability to extend bridges to neighbouring metal centres to form coordination polymers, they are hardly used in this capacity. Less than 40 structures featuring both carboxylato groups connected to a metal are deposited in the CCDC currently.

Our work focusses on the synthesis of coordination polymers with dicarboxylic acids, including tartaric acid and the titular derivatives thereof [2,3]. During these experiments, several new compounds featuring DBTA or DPTTA were synthesised, crystallized, and characterized. In this presentation we showcase several of these compounds, discuss structural similarities and differences as well as the influence of different metals, coligands or stereoisomers on the resulting structures.

[1] C. R. Groom, I. J. Bruno, M. P. Lightfoot and S. C. Ward, *Acta Cryst.*, **2016**, *B72*, 171-179 DOI: 10.1107/S2052520616003954

[2] M. Kremer, J. van Leusen, U. Englert, Crystals, 2020, 10, 485. DOI: 10.3390/cryst10060485

[3] M. Kremer, Dissertation, RWTH Aachen, 2020, available on the website of the RWTH University Library

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