



Contribution ID: 214

Type: **Talk**

## **The structural basis of orotidine-5'-phosphate decarboxylase catalysis: Ground-state destabilisation by electrostatic repulsion is not a driving force**

*Monday, 14 March 2022 14:30 (20 minutes)*

I will present crystallographic snapshots of the human enzyme orotidine-5-monophosphate decarboxylase in complex with the genuine substrate, substrate analogs, transition state analogs and product - all at true atomic resolution. These snapshots of catalysis defy the proposed mechanism of ground-state destabilization by revealing that the substrate carboxylate is protonated and forms a favorable low-barrier hydrogen bond with a negatively charged amino acid.

**Primary author:** TITTMANN, Kai

**Presenter:** TITTMANN, Kai

**Session Classification:** Biocrystallography: Enzymes

**Track Classification:** Main conference: Biologic Structure, Function, Reactivity, and Regulation