

Publication

Aqueous oxidation of alcohols catalyzed by artificial metalloenzymes based on the biotin-avidin technology

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 116770**Author(s)** Thomas, Christophe M.; Letondor, Christophe; Humbert, Nicolas; Ward, Thomas R.**Author(s) at UniBasel** [Ward, Thomas R.](#) ;**Year** 2005**Title** Aqueous oxidation of alcohols catalyzed by artificial metalloenzymes based on the biotin-avidin technology**Journal** Journal of Organometallic Chemistry**Volume** 690**Number** 20**Pages / Article-Number** 4488-4491

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Based on the incorporation of biotinylated organometallic catalyst precursors within (strept)avidin, we have developed artificial metalloenzymes for the oxidation of secondary alcohols using tert-butylhydroperoxide as oxidizing agent. In the presence of avidin as host protein, the biotinylated aminosulfonamide ruthenium piano stool complex 1 (0.4 mol%) catalyzes the oxidation of sec-phenethyl alcohol at room temperature within 90 h in over 90% yield. Gel electrophoretic analysis of the reaction mixture suggests that the host protein is not oxidatively degraded during catalysis.

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