

**Additional file 2:****Metal-related catalytic activity of QueD.****Table S1. Specific activities of *Streptomyces quercetinase* if completely loaded with a single metal species.**

To extrapolate the specific activities of QueD proteins fully occupied with the indicated metal, it was assumed that the specific activity measured for proteins with mixed metal occupancy is a linear correlation of metal content and metal-related specific activity. 26 preparations of recombinant QueD with different metal occupancies were analyzed. The coefficient of determination  $R^2$  is 0.848. Due to highly variable Mn contents and very low Zn contents in the preparations, errors are very large.

<b>QueD form</b>	<b>Extrapolated metal-related specific activity (U mg<sup>-1</sup>)</b>	<b>Relative error (%)</b>
<b>Co-QueD</b>	28.5	49.8
<b>Cu-QueD</b>	$\ll 10^{-10}$	$\infty$
<b>Fe-QueD</b>	$\ll 10^{-10}$	$\infty$
<b>Mn-QueD</b>	46.3	84.5
<b>Ni-QueD</b>	183.3	8.4
<b>Zn-QueD</b>	79.4	75.7