

# Effect of Copper on Acid Phosphatase Activity in Yeast *Yarrowia lipolytica*

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Acid phosphatase (APase) activity of the yeast *Yarrowia lipolytica* increased with increasing  $\text{Cu}^{2+}$  concentrations in the medium. Furthermore, the enzyme in soluble form was stimulated *in vitro* by  $\text{Cu}^{2+}$ ,  $\text{Co}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Mn}^{2+}$  and  $\text{Mg}^{2+}$  and inhibited by  $\text{Ag}^{+}$  and  $\text{Cd}^{2+}$ . The most effective ion was  $\text{Cu}^{2+}$ , especially for the enzyme from cultures in medium containing  $\text{Cu}^{2+}$ , whereas APase activity in wall-bound fragments was only slightly activated by  $\text{Cu}^{2+}$ . The content of cellular phosphate involving polyphosphate was decreased by adding  $\text{Cu}^{2+}$ , regardless of whether or not the medium was rich in inorganic phosphate. Overproduction of the enzyme stimulated by  $\text{Cu}^{2+}$  might depend on derepression of the gene encoding the APase isozyme.

*Key words:* Acid Phosphatase, Copper, *Yarrowia lipolytica*