

# Laccase

# Data sheet

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## Cat.-No: 10-101-UF EC 1.10.3.2 (Liquid form) Benzenediol oxygen oxidoreductase



MetGen Oy | Itäinen Pitkäkatu 4B | 20520 Turku, Finland | Tel.:+358 2 4788341 | VAT# FI20755849 | <http://www.metgen.com>

### Batch-No

10-101-UF-201008

#### Form

Thermoinactivated liquid crude cell lysate

#### Storage buffer:

50mM Tris pH7.5, 10mM CuCl<sub>2</sub>, 1%TritonX-100

#### Applications

Oxidation and Decomposition of various aromatic and non-aromatic compounds by a radical-catalysed reaction mechanism, Decolorization of dyes, Delignification of biomass, Detoxification of substrate for alcoholic fermentation, Reduction of chemical oxygen demand and phenol levels from wastewater, Bioremediation.

#### Description

Laccases are oxidoreductases belonging to the multinuclear copper-containing oxidases and their uses span from the textile to the pulp and paper industries, and from food applications to bioremediation processes. Laccases also have uses in the organic synthesis, pharmaceutical and nanotechnological sectors. These oxidase enzymes catalyze oxidation of substrates at the expense of molecular oxygen and produce water as the only by-product.

#### Selected references:

- Riva, S. (2006). Laccases: blue enzymes for green chemistry. Trends in biotechnology 24, 219-26.
- Rodríguez Couto, S., and Toca Herrera, J. L. (2006). Industrial and biotechnological applications of laccases: a review. Biotechnology advances 24, 500-13.
- Shyur, L.-fen (2007). Enzymes for Pre-treatment of Lignocellulosics : Ligninases and Laccases. Biotechnology.
- Skals, P. B., Krabek, A., Nielsen, P. H., and Wenzel, H. (2007). Environmental assessment of enzyme assisted processing in pulp and paper industry. The International Journal of Life Cycle Assessment 13, 124-132.

For *in vitro* use only

Quality guaranteed for 6 months

Store at -80°C, keep at +4°C for use

#### Activity

1,3 µkat/g at 60°C in 100mM succinic acid pH3 with 5mM ABTS as substrate.

The activity for ABTS is calculated such as:

$$\mu\text{kat/g} = \frac{\text{Abs (405nm)} \times 10^6}{38.6 \times 10^3 \times t(\text{sec}) \times P(\text{g/L})}$$

Where:

**Abs (405nm)** is the change in absorbance of the reaction mixture during the reaction time (measured in 1 cm cuvet ).

**38.6 x 10<sup>3</sup>** is molar extinction of **ABTS**.

**t (sec)** is time of the reaction in seconds

**P(g/L)** is protein concentration in the reaction in gram per litre

10<sup>6</sup> is for converting Katal to microKatal

#### Tolerated reaction conditions:

Temperature: +4°C-80°C.

pH: 3-9

#### Protein concentration:

7.22 mg/ml