

ENZYMES
BY

SORACHIM

Ascorbate Oxidase from Cucumis sp.

ASO-301

SPECIFICATIONS

| | |
|------------------------|---|
| Product name: | L-Ascorbate: oxygen oxidoreductase |
| EC: | 1.10.3.3 |
| Appearance: | Light blue amorphous powder, lyophilized |
| Activity: | Grade III, 200 U/mg solid or more (containing approx. 70% of stabilizers) |
| Contaminants: | Catalase:< 0.1 % Phosphatase:< 0.02% |
| Stability: | Stable at -20 °C for at least 12 months |
| Stabilizers: | Bovine serum albumin, borax, basic amino acids |
| Molecular weight: | 132,000 |
| Isoelectric point: | Between 6.0 and 7.8 |
| Michaelis constant: | 2.5 x 10 ⁻⁴ M (Ascorbate) |
| Inhibitors: | Cyanide, Na ₂ S, diethyldithiocarbamate (Na) |
| Optimum pH: | 5.6 |
| Optimum temperature: | approx. 30 °C |
| pH Stability: | pH 7.0 - 10.0 (25 °C, 20hr) |
| Thermal stability: | Below 40 °C (pH 8.0, 30 min) |
| Substrate specificity: | The enzyme oxidizes ascorbic acid and several ascorbic acid derivatives. |

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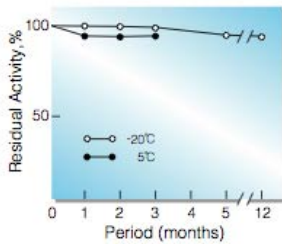


Fig.1. Stability (Powder form)
(kept under dry conditions)

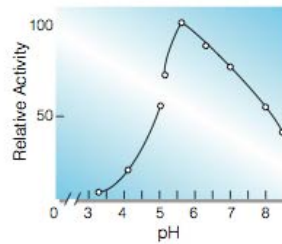


Fig.3. pH-Activity
(30°C in 0.33 M buffer solution: pH3.0-6.0, acetate; pH5.0-8.0, phosphate)

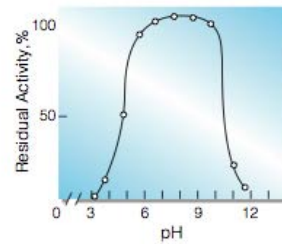


Fig.5. pH-Stability
(25°C, 17hr-treatment with Britton-Robinson's buffer)

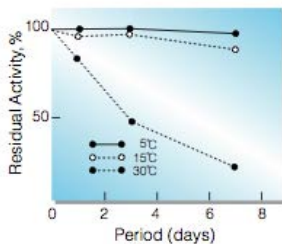


Fig.2. Stability (Liquid form)
(enzyme concn. : 8,000U/ml
buffer composition : 45mM borate buffer, pH7.8)

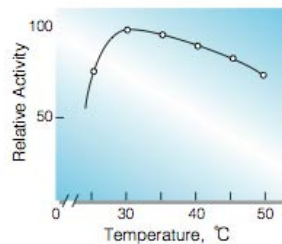


Fig.4. Temperature activity
(in 0.33M phosphate buffer, pH5.6)

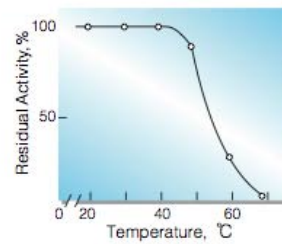


Fig.6. Thermal stability
(30min-treatment with 50mM phosphate buffer, pH 8.0
enzyme concn.: 12U/ml)