

# Purification and Characterization of Avian Liver Mevalonate-5-pyrophosphate Decarboxylase

Alvear, Marysol

Jabalquinto, Ana Maria

Eyzaguirre, Jaime

Cardemil, Emilio

Mevalonate-5-pyrophosphate decarboxylase [ATP:5-diphosphomevalonate carboxy-lyase (dehydrating), EC 4.1.1.33] has been purified 5800 times from chicken liver and obtained in a stable and highly purified form. The protein is a dimer of molecular weight  $85400 \pm 1941$ , and its subunits were not resolved by gel electrophoresis in denaturing conditions. The purified enzyme does not require the presence of SH-containing reagents for either activity or stability. The enzyme shows a high specificity for adenosine 5'-triphosphate (ATP) and requires for activity a divalent metal cation,  $Mg^{2+}$  being most effective. The optimum pH for the enzyme ranges from 4.0 to 6.5. Inhibitory effects for the enzyme activity were detected by citrate, phthalate, and phosphate. The isoelectric point, as determined by column chromatofocusing, is 4.8. The kinetics are hyperbolic for both substrates, showing a sequential mechanism; true  $K_m$  values of 0.0141 mM and 0.504 mM have been obtained for mevalonate-5-pyrophosp