

Subcellular localization of prostaglandin-E2 in rat heart tissue

Zamorano, Berta

It has been reported that isolated rat heart myocytes and cardiac mesenchymal cells convert arachidonic acid mainly into three types of prostaglandins (PGs): PGE₂, PGF₂?, and PGI₂ [1]. In addition, we have demonstrated that fresh atrial slices of patients with heart-valve disease contain appreciable quantities of PGE₂ and PGF₂? [2]. However, there have been no reports on the subcellular localization of the prostaglandin system in heart muscle tissue. The present study was performed to define the distribution of PGE₂ in mitochondrial, microsomal, and cytosolic fractions, isolated by differential centrifugation from homogenates of fresh normal rat atrium and ventricle slices. In addition, we determined whether differences exist in PGE₂ levels between atrial subcellular fractions and those of ventricular fractions. The results showed that PGE₂ was located mainly in the highspeed cytosolic supernatant fraction of the heart homogenates analyzed. Furthermore, PGE₂ concentrations (ng/mg prote