

Complexes of bivalent cations with neryl and geranyl pyrophosphate: Their role in terpene biosynthesis

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Kinetic analysis of the nonenzymic solvolysis of neryl and geranyl pyrophosphate (NPP and GPP, respectively) showed that the dissociation constants of the bis-metallic complexes with Mg^{2+} and Mn^{2+} were larger for NPP than for GPP by approximately one order of magnitude. Rate constants for reaction of the bis-metallic complexes were larger for NPP than for GPP. Qualitatively similar behavior was observed with complexes of Co^{2+} . Extents of elimination and cyclization were increased by metal ions. Carbocyclase-catalyzed formation of cyclic monoterpene hydrocarbons in the presence of Mg^{2+} involved bis-metallic complexes as the "true" substrates. © 1984.