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(54) Title: INCREASED ISOPRENE PRODUCTION USING MEVALONATE KINASE AND ISOPRENE SYNTHASE

Figure 19A

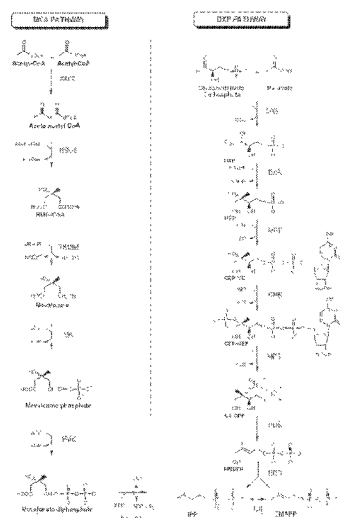
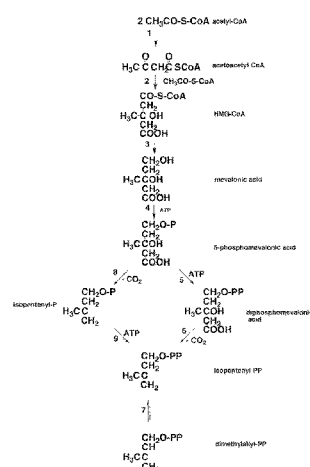


Figure 19B



(57) Abstract: The invention features methods for producing isoprene from cultured cells having increased expression levels and/or activity levels of a mevalonate kinase polypeptide and an isoprene synthase polypeptide. The invention also provides methods for producing isoprene from cultured cells having reduced accumulation of intermediates (such as mevalonate, isopentenyl diphosphate, 3,3-dimethylallyl diphosphate, geranyl diphosphate, or farnesyl diphosphate) in the biosynthesis of isoprene or isoprenoids that may otherwise cause undesirable amounts of growth inhibition, toxicity, or cell death. The resulting isoprene compositions may have increased yields and/or purity of isoprene.