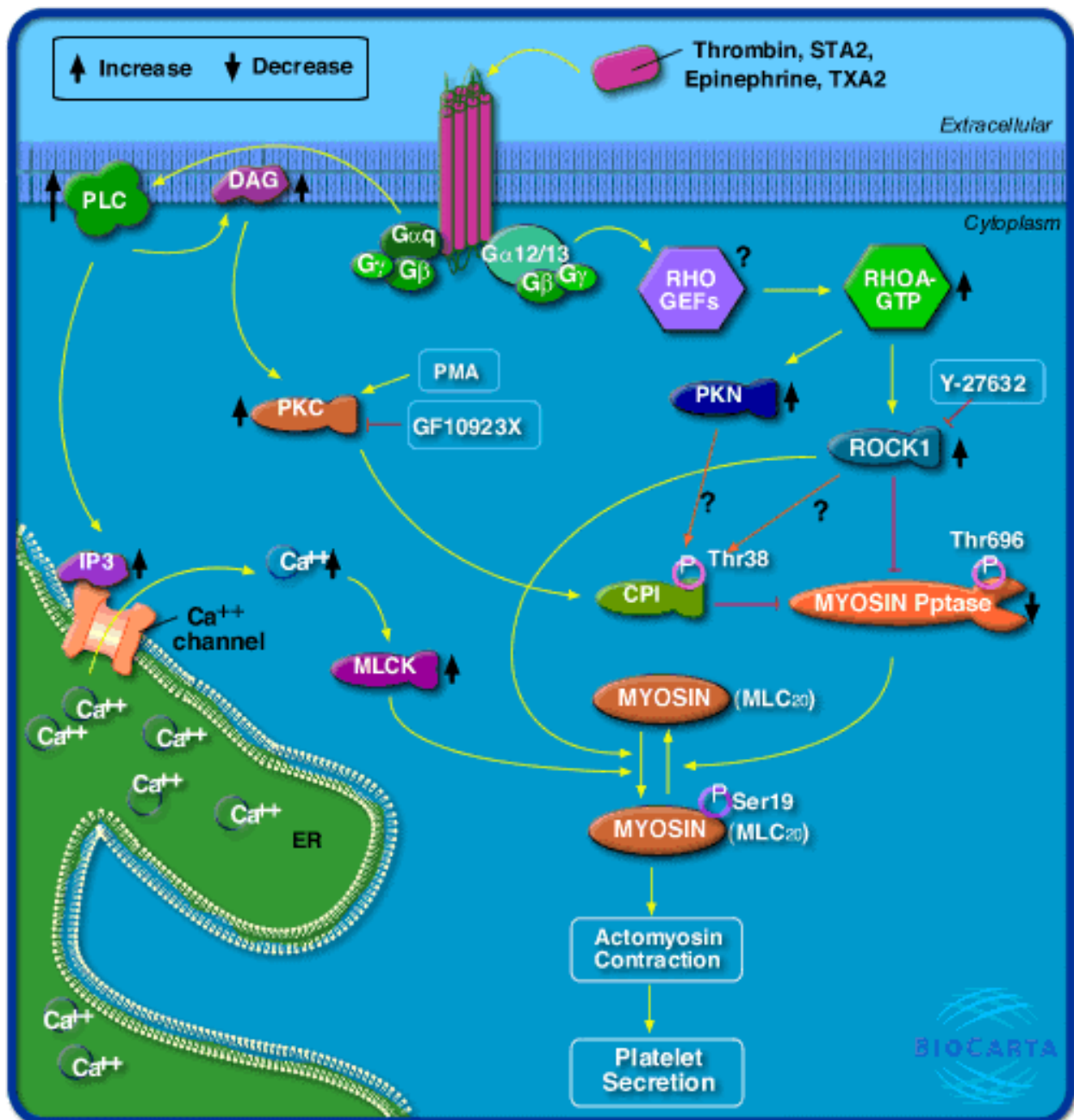


Calcium, Heart & Myosin



The phosphorylation of myosin affects its role in smooth muscle contraction, platelet formation and possibly other processes. Phosphorylation by myosin light chain kinase (MLCK) increases myosin activity and dephosphorylation by myosin phosphatase decreases myosin activity. CPI, a factor that binds to and inhibits myosin phosphatase, is a target of phosphorylation by PKC and PKN. The inhibitory activity of CPI is regulated by its own phosphorylation state; when CPI is phosphorylated, its inhibitory activity is increased. The activation of signal transduction cascades such as GPCR pathways can lead to activation of PKC, phosphorylation of CPI, inhibition of myosin

phosphatase, increased myosin phosphorylation and increased smooth muscle contraction or platelet release. The action of histamine in vasoconstriction, for example, may be mediated by activation of PKC through the histamine receptor, resulting in phosphorylation of CPI-17, increased inhibition of myosin phosphatase, and increased smooth muscle contraction.