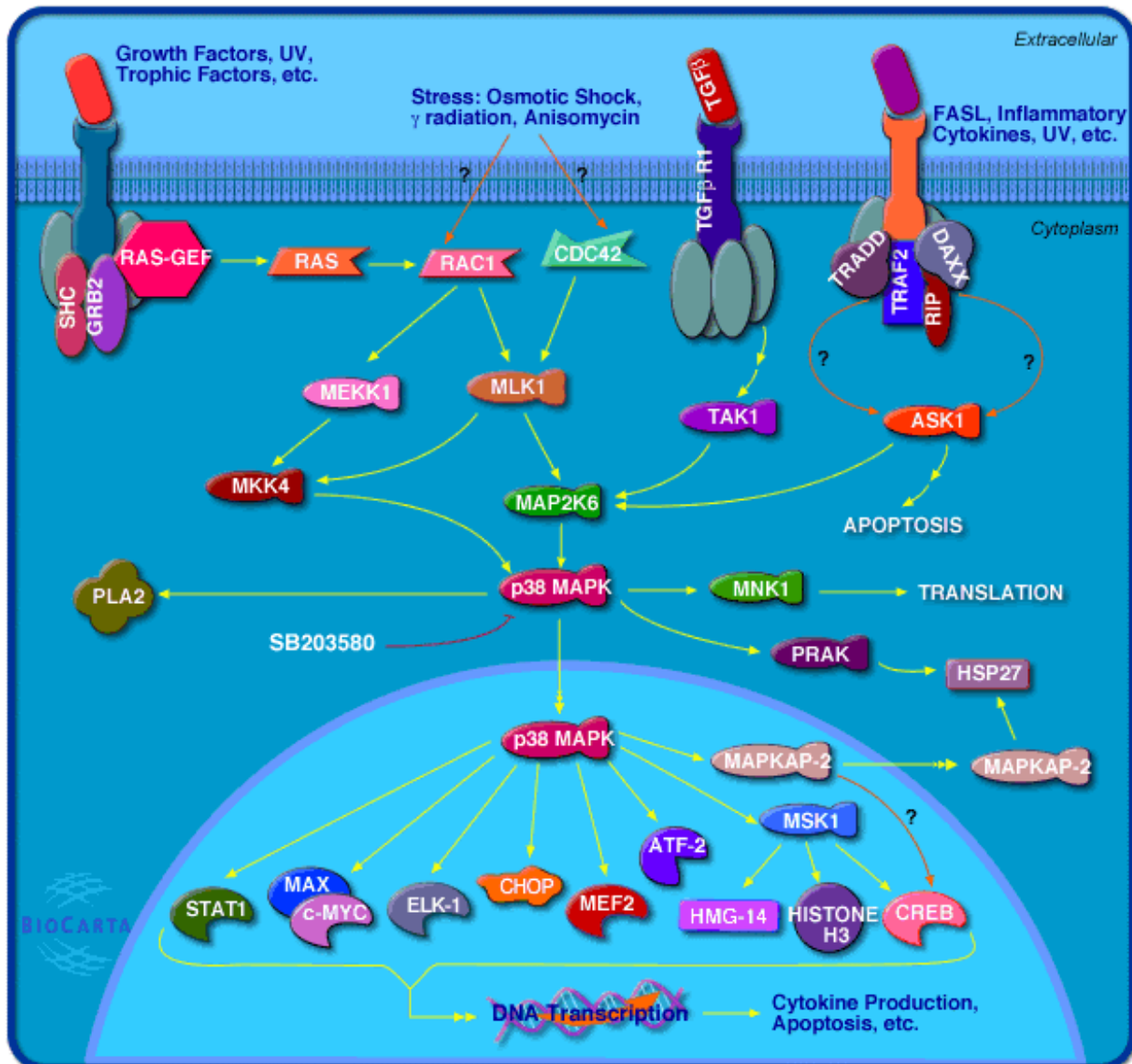


Map38 & Stress



p38 MAPKs are members of the MAPK family that are activated by a variety of environmental stresses and inflammatory cytokines. Stress signals are delivered to this cascade by members of small GTPases of the Rho family (Rac, Rho, Cdc42). As with other MAPK cascades, the membrane-proximal component is a MAPKKK, typically a MEKK or a mixed lineage kinase (MLK). The MAPKKK phosphorylates and activates MKK3/5, the p38 MAPK kinase. MKK3/6 can also be activated directly by ASK1, which is stimulated by apoptotic stimuli. P38 MAK is involved in regulation of Hsp27 and MAPKAP-2 and several transcription factors including ATF2, STAT1, THE Max/Myc complex, MEF-2, ELK-1 and indirectly CREB via activation of MSK1.