



Fig.1 Schematic of potential effects of PCr on mitochondrial related targets

JAK / STAT3 axis inhibits autophagy by entering mitochondria and binds with enough CypD to maintain the stability of respiratory chain. PCr not only inhibits ROS, but also provides sufficient energy for cells. Moreover, PCr plays a role in maintaining membrane stability and in limiting oxide overload through the phosphorylation of STAT3, the protection of CmpI, energy providing, the stimulation of CypD and the inhibition of mitoflash so on. CypD is limited by reducing STAT phosphorylation; The appropriate quantity of CypD maintains ATP synthase and keep the integrity of the whole respiratory chain so as to make the cells survive under stress. However, the excessive CypD induces MPTP opening, causing autophagy or apoptosis.