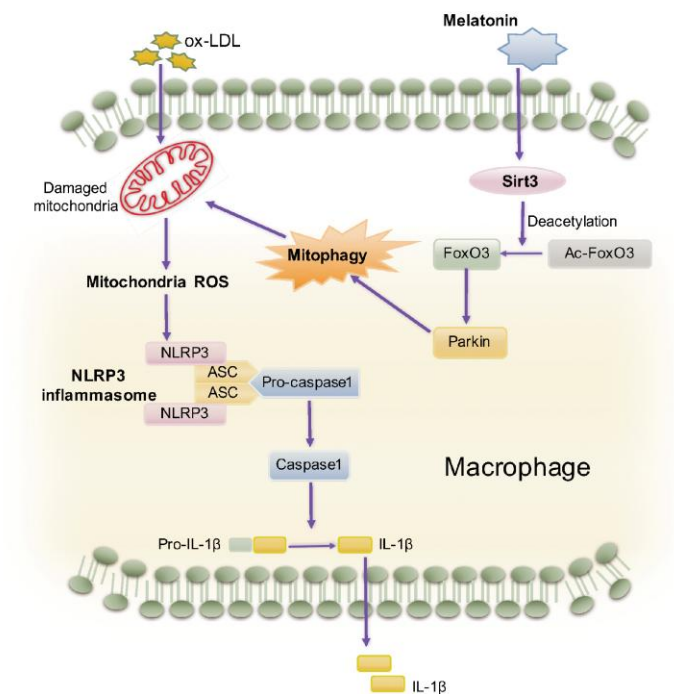


Graphical Abstract



Ox-LDL induced mitochondrial damage, which contributed to the excessive mitoROS generation and consequential NLRP3 inflammasome activation in macrophages. Melatonin activated Sirt3 and FoxO3/Parkin-mediated mitophagy, attenuated the mitoROS level and the NLRP3 inflammasome activation, and subsequently reduced Caspase 1 activation and IL-1β secretion.