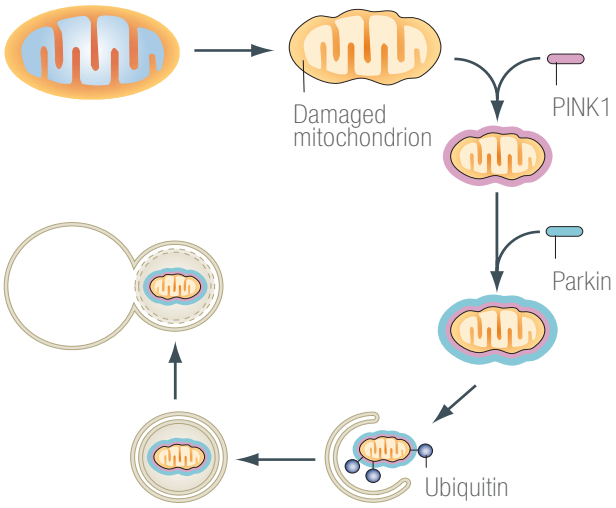
Crown insight

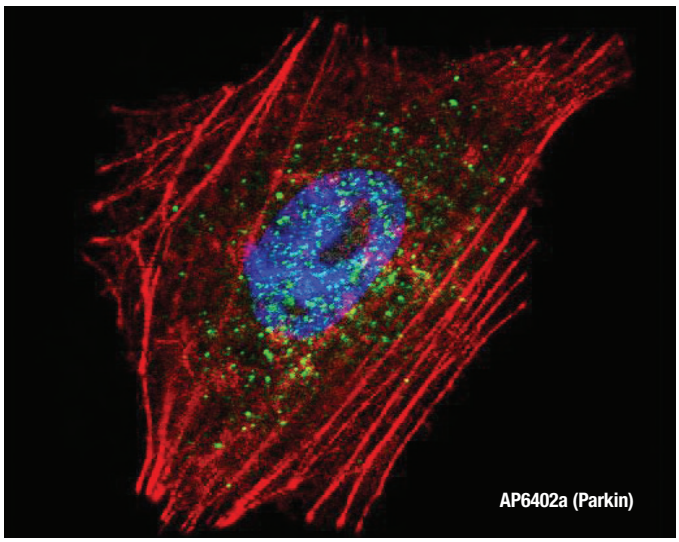
OCTOBER 2013 :

Parkin

Introduction

Damaged mitochondria can be degraded through a type of organelle-specific autophagy called mitophagy. The Ser/Thr kinase PTEN-induced putative kinase 1 (PINK1) and the ubiquitin E3 ligase Parkin (Parkinson juvenile disease protein 2, PARK2) are known to promote mitophagy. Parkin ubiquitylates mitochondrial proteins and causes mitochondria to become engulfed by isolation membranes that then fuse with lysosomes (figure bellow). In this model, the autophagy adaptor protein p62/SQSTM1 (p62) binds to ubiquitinated proteins via its ubiquitin-associated domain and to LC3 on the phagophore via its LC3-interacting region. Thus, the binding of p62 to ubiquitinated mitochondrial proteins tethers the mitochondrion to the LC3-positive phagophore for engulfment. PARKIN also interacts with AMBRA1 (Activating molecule in Beclin-1-regulated autophagy protein 1) at mitochondria to promote mitochondrial clearance, and depolarization of mitochondria increases the interaction between Parkin and AMBRA1.





Fluorescent confocal image of NCI-H460 cells stained with Parkin Antibody (N-term)(Cat#AP6402a). NCI-H460 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min) and incubated with Parkin primary antibody. For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).Nuclei were counterstained with DAPI.

Selected Abgent Products

CAT. #	TARGET NAME
AP6402a	Parkin Antibody (N-term)
AP3641a	Phospho-LC3A-S3 Antibody
AP1806a	Cleaved LC3B Antibody
AP13795a	Beclin 1 Antibody
AP1800a	LC3 Antibody (APG8A)
AP1801d	LC3 Antibody (APG8A) (D106)
AP1321a	BNIP3 Antibody (BH3 Domain Specific)
AM1818a	Beclin 1 Antibody (Ascites)
AP2183b	SQSTM1 (p62) Antibody (C-term)
AM1800a	LC3 Antibody (APG8)
AP1802a	LC3 Antibody (APG8B) (N-term)
AP1805a	Cleaved LC3A Antibody
AP1801a	LC3 Antibody (APG8A) (N-term)
AP11786c	NIX Antibody (Center)

Visual categorization

Target associated (orange)

Autophagy Stem Cell Neurodegeneration

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