

Anti-Parkin PARK2 Rabbit Monoclonal Antibody
Catalog # ABO13862**Specification****Anti-Parkin PARK2 Rabbit Monoclonal Antibody - Product Information**

Application	WB, IHC, IF, ICC, IP, FC
Primary Accession	O60260
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Liquid

Description

Anti-Parkin PARK2 Rabbit Monoclonal Antibody . Tested in WB, IHC, ICC/IF, IP, Flow Cytometry applications. This antibody reacts with Human, Mouse, Rat.

Anti-Parkin PARK2 Rabbit Monoclonal Antibody - Additional Information

Gene ID 5071

Other Names

E3 ubiquitin-protein ligase parkin, Parkin, 2.3.2.31, Parkin RBR E3 ubiquitin-protein ligase {ECO:0000312|HGNC:HGNC:8607}, Parkinson juvenile disease protein 2, Parkinson disease protein 2, PRKN (http://www.genenames.org/cgi-bin/gene_symbol_report?hgnc_id=8607), PARK2

Calculated MW

51641 MW KDa

Application Details

WB 1:500-1:2000
IHC 1:50-1:200
ICC/IF 1:50-1:200
IP 1:50
FC 1:50

Subcellular Localization

Cytoplasm, cytosol. Nucleus. Endoplasmic reticulum. Mitochondrion. Mainly localizes in the cytosol. Co-localizes with SYT11 in neurites. Co-localizes with SNCAIP in brainstem Lewy bodies. Mitochondrial localization gradually increases with cellular growth. Also relocates to dysfunctional mitochondria that have lost the mitochondrial membrane potential; recruitment to mitochondria is PINK1- dependent.

Tissue Specificity

Highly expressed in the brain including the substantia nigra. Expressed in heart, testis and skeletal muscle. Expression is down-regulated or absent in tumor biopsies, and absent in the brain of PARK2 patients. Overexpression protects dopamine neurons from kainate-mediated apoptosis. Found in serum (at protein level)..

Contents

Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.

Immunogen

A synthesized peptide derived from human Parkin

Purification

Affinity-chromatography

Storage

Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Anti-Parkin PARK2 Rabbit Monoclonal Antibody - Protein Information

Name PRKN ([HGNC:8607](#))

Synonyms PARK2

Function

Functions within a multiprotein E3 ubiquitin ligase complex, catalyzing the covalent attachment of ubiquitin moieties onto substrate proteins (PubMed:10888878, PubMed:10973942, PubMed:11431533, PubMed:12150907, PubMed:12628165, PubMed:15105460, PubMed:16135753, PubMed:21376232, PubMed:21532592, PubMed:22396657, PubMed:23620051, PubMed:23754282, PubMed:24660806, PubMed:24751536, PubMed:29311685, PubMed:32047033). Substrates include SYT11 and VDAC1 (PubMed:29311685, PubMed:32047033). Other substrates are BCL2, CCNE1, GPR37, RHOT1/MIRO1, MFN1, MFN2, STUB1, SNCAIP, SEPTIN5, TOMM20, USP30, ZNF746, MIRO1 and AIMP2 (PubMed:10888878, PubMed:10973942, PubMed:11431533, PubMed:12150907, PubMed:12628165, PubMed:15105460, PubMed:16135753, PubMed:21376232, PubMed:21532592, PubMed:22396657, PubMed:23620051, PubMed:23754282, PubMed:24660806, PubMed:24751536). Mediates monoubiquitination as well as 'Lys-6', 'Lys-11', 'Lys-48'-linked and 'Lys-63'-linked polyubiquitination of substrates depending on the context (PubMed:19229105, PubMed:20889974, PubMed:25474007, PubMed:25621951, PubMed:32047033). Participates in the removal and/or detoxification of abnormally folded or damaged protein by mediating 'Lys-63'-linked polyubiquitination of misfolded proteins such as PARK7: 'Lys-63'-linked polyubiquitinated misfolded proteins are then recognized by HDAC6, leading to their recruitment to aggresomes, followed by degradation (PubMed:17846173, PubMed:19229105). Mediates 'Lys-63'-linked polyubiquitination of a 22 kDa O-linked glycosylated isoform of SNCAIP, possibly playing a role in Lewy-body formation (PubMed:11431533, PubMed:11590439, PubMed:15105460, PubMed:15728840, PubMed:19229105). Mediates monoubiquitination of BCL2, thereby acting as a positive regulator of autophagy (PubMed:20889974). Protects against mitochondrial dysfunction during cellular stress, by acting downstream of PINK1 to coordinate mitochondrial quality control mechanisms that remove and replace dysfunctional mitochondrial components (PubMed:11439185, PubMed:18957282, PubMed:19029340, PubMed:19966284, PubMed:21376232, PubMed:22082830, PubMed:22396657, PubMed:23620051, PubMed:23933751, PubMed:24660806, PubMed:24784582, PubMed:24896179, PubMed:25474007, PubMed:25527291, PubMed:32047033). Depending on the severity of mitochondrial damage and/or dysfunction, activity ranges from preventing apoptosis and stimulating mitochondrial biogenesis to regulating mitochondrial dynamics and eliminating severely damaged mitochondria via mitophagy (PubMed:11439185, PubMed:19029340, PubMed:19801972, PubMed:19966284, PubMed:21376232, PubMed:22082830, PubMed:22396657, PubMed:23620051, PubMed:23685073, PubMed:23933751, PubMed:24896179, PubMed:25527291, PubMed:32047033, PubMed:33499712). Activation and recruitment onto the outer membrane of damaged/dysfunctional mitochondria (OMM) requires PINK1-mediated phosphorylation of both PRKN and ubiquitin (PubMed:24660806, PubMed:<a

[24784582](http://www.uniprot.org/citations/24784582), PubMed: [25474007](http://www.uniprot.org/citations/25474007), PubMed: [25527291](http://www.uniprot.org/citations/25527291)). After mitochondrial damage, functions with PINK1 to mediate the decision between mitophagy or preventing apoptosis by inducing either the poly- or monoubiquitination of VDAC1, respectively; polyubiquitination of VDAC1 promotes mitophagy, while monoubiquitination of VDAC1 decreases mitochondrial calcium influx which ultimately inhibits apoptosis (PubMed: [27534820](http://www.uniprot.org/citations/27534820), PubMed: [32047033](http://www.uniprot.org/citations/32047033)). When cellular stress results in irreversible mitochondrial damage, promotes the autophagic degradation of dysfunctional depolarized mitochondria (mitophagy) by promoting the ubiquitination of mitochondrial proteins such as TOMM20, RHOT1/MIRO1, MFN1 and USP30 (PubMed: [19029340](http://www.uniprot.org/citations/19029340), PubMed: [19966284](http://www.uniprot.org/citations/19966284), PubMed: [21753002](http://www.uniprot.org/citations/21753002), PubMed: [22396657](http://www.uniprot.org/citations/22396657), PubMed: [23620051](http://www.uniprot.org/citations/23620051), PubMed: [23685073](http://www.uniprot.org/citations/23685073), PubMed: [23933751](http://www.uniprot.org/citations/23933751), PubMed: [24896179](http://www.uniprot.org/citations/24896179), PubMed: [25527291](http://www.uniprot.org/citations/25527291)). Preferentially assembles 'Lys-6', 'Lys-11' and 'Lys-63'-linked polyubiquitin chains, leading to mitophagy (PubMed: [25621951](http://www.uniprot.org/citations/25621951), PubMed: [32047033](http://www.uniprot.org/citations/32047033)). The PINK1-PRKN pathway also promotes fission of damaged mitochondria by PINK1-mediated phosphorylation which promotes the PRKN-dependent degradation of mitochondrial proteins involved in fission such as MFN2 (PubMed: [23620051](http://www.uniprot.org/citations/23620051)). This prevents the refusion of unhealthy mitochondria with the mitochondrial network or initiates mitochondrial fragmentation facilitating their later engulfment by autophagosomes (PubMed: [23620051](http://www.uniprot.org/citations/23620051)). Regulates motility of damaged mitochondria via the ubiquitination and subsequent degradation of MIRO1 and MIRO2; in motor neurons, this likely inhibits mitochondrial intracellular anterograde transport along the axons which probably increases the chance of the mitochondria undergoing mitophagy in the soma (PubMed: [22396657](http://www.uniprot.org/citations/22396657)). Involved in mitochondrial biogenesis via the 'Lys-48'-linked polyubiquitination of transcriptional repressor ZNF746/PARIS which leads to its subsequent proteasomal degradation and allows activation of the transcription factor PPARGC1A (PubMed: [21376232](http://www.uniprot.org/citations/21376232)). Limits the production of reactive oxygen species (ROS) (PubMed: [18541373](http://www.uniprot.org/citations/18541373)). Regulates cyclin-E during neuronal apoptosis (PubMed: [12628165](http://www.uniprot.org/citations/12628165)). In collaboration with CHPF isoform 2, may enhance cell viability and protect cells from oxidative stress (PubMed: [22082830](http://www.uniprot.org/citations/22082830)). Independently of its ubiquitin ligase activity, protects from apoptosis by the transcriptional repression of p53/TP53 (PubMed: [19801972](http://www.uniprot.org/citations/19801972)). May protect neurons against alpha synuclein toxicity, proteasomal dysfunction, GPR37 accumulation, and kainate-induced excitotoxicity (PubMed: [11439185](http://www.uniprot.org/citations/11439185)). May play a role in controlling neurotransmitter trafficking at the presynaptic terminal and in calcium-dependent exocytosis. May represent a tumor suppressor gene (PubMed: [12719539](http://www.uniprot.org/citations/12719539)).

Cellular Location

Cytoplasm, cytosol. Nucleus. Endoplasmic reticulum. Mitochondrion. Mitochondrion outer membrane {ECO:0000250|UniProtKB:Q9WVS6}. Cell projection, neuron projection. Postsynaptic

density {ECO:0000250|UniProtKB:Q9WVS6}. Presynapse {ECO:0000250|UniProtKB:Q9WVS6}. Note=Mainly localizes in the cytosol (PubMed:19029340, PubMed:19229105). Co-localizes with SYT11 in neurites (PubMed:12925569). Co-localizes with SNCAIP in brainstem Lewy bodies (PubMed:10319893, PubMed:11431533). Translocates to dysfunctional mitochondria that have lost the mitochondrial membrane potential; recruitment to mitochondria is PINK1-dependent (PubMed:18957282, PubMed:19966284, PubMed:23620051, PubMed:24898855) Mitochondrial localization also gradually increases with cellular growth (PubMed:22082830).

Tissue Location

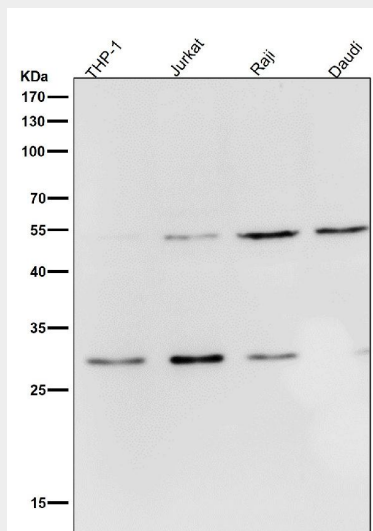
Highly expressed in the brain including the substantia nigra (PubMed:19501131, PubMed:9560156). Expressed in heart, testis and skeletal muscle (PubMed:9560156). Expression is down-regulated or absent in tumor biopsies, and absent in the brain of PARK2 patients (PubMed:12719539, PubMed:14614460). Overexpression protects dopamine neurons from kainate-mediated apoptosis (PubMed:12628165) Found in serum (at protein level) (PubMed:19501131)

Anti-Parkin PARK2 Rabbit Monoclonal Antibody - Protocols

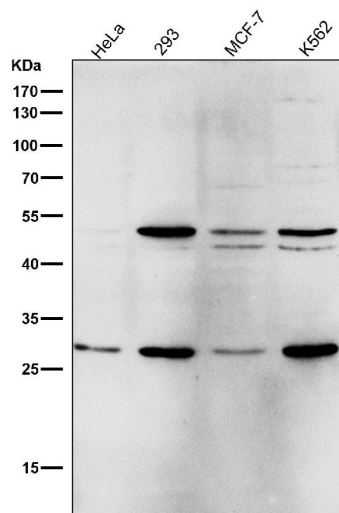
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

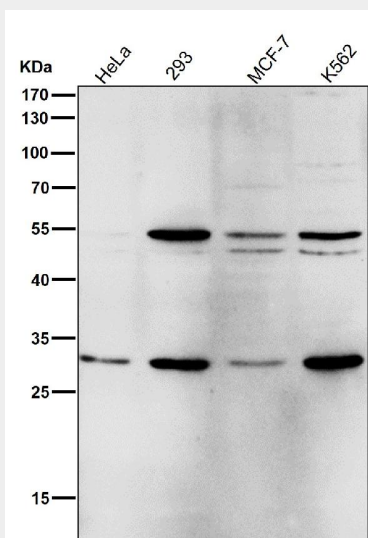
Anti-Parkin PARK2 Rabbit Monoclonal Antibody - Images



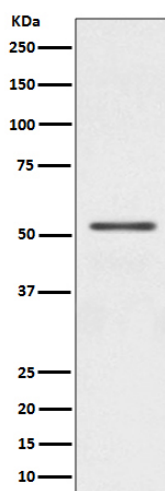
All lanes use the Antibody at 1:2K dilution for 1 hour at room temperature.



All lanes use the Antibody at 1:2K dilution for 1 hour at room temperature.



All lanes use the Antibody at 1:2K dilution for 1 hour at room temperature.



Western blot analysis of Parkin expression in Jurkat cell lysate.