SunLong Biotech Co.,LTD
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[Primary Antibody]

Rabbit Anti-Parkin antibody

Catalog Number: SL23687R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Parkin
Immunogen:	KLH conjugated synthetic peptide derived from human Parkin: 261-465/465
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	WB=1:500-2000 IHC-P=1:100-500 IHC-F=1:100-500 IF=1:100-500 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Human,Mouse(predicted:Rat,Pig,Cow,Sheep)
Predicted MW.:	51kDa
Subcellular Location:	The nucleus cytoplasmic The cell membrane
Background:	Parkinson's Disease, the second most common neurodegenerative disease after Alzheimer's Disease, is characterized by the loss of dopaminergic neurons and the presence of Lewy bodies (comprised of alpha synuclein and parkin inclusions). Autosomal Recessive Juvenile Parkinsonism (AR-JP) is a recently described form of Parkinson's Disease that has been linked to a gene that codes for parkin. Parkin, a 52 kDa protein, has a suggested role in the ubiquitin/proteasome pathway for protein degradation. The amino terminus bears sequence homology to ubiquitin while functionally it acts as a RING type ubiquitin protein ligase (E3) that coordinates the transfer of ubiquitin to substrate proteins, thus targeting them for degradation by the proteasome. **Function:** Functions within a multiprotein E3 ubiquitin ligase complex, catalyzing the covalent attachment of ubiquitin moieties onto substrate

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	proteins, such as BCL2, SYT11, CCNE1, GPR37, STUB1, a 22 kDa O-linked glycosylated isoform of SNCAIP, SEPT5, ZNF746 and AIMP2. Mediates monoubiquitination as well as 'Lys-48'-linked and 'Lys-63'-linked polyubiquitination of substrates depending on the context. 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. Mediates 'Lys-63'-linked polyubiquitination of SNCAIP, possibly playing a role in Lewy-body formation. Mediates monoubiquitination of BCL2, thereby acting as a positive regulator of autophagy. Promotes the autophagic degradation of dysfunctional depolarized mitochondria. Mediates 'Lys-48'-linked polyubiquitination of ZNF746, followed by degradation of ZNF746 by the proteasome; possibly playing a role in role in regulation of neuron death. Limits the production of reactive oxygen species (ROS). Loss of this ubiquitin ligase activity appears to be the mechanism underlying pathogenesis of PARK2. May protect neurons against alpha synuclein toxicity, proteasomal dysfunction, GPR37 accumulation, and kainate-induced excitotoxicity. May play a role in controlling neurotransmitter trafficking at the presynaptic terminal and in calcium-dependent exocytosis. Regulates cyclin-E during neuronal apoptosis. May represent a tumor suppressor gene. **Subunit:** Forms an E3 ubiquitin ligase complex with UBE2L3 or UBE2L6. Mediates 'Lys-63'-linked polyubiquitination by associating with UBE2V1. Part of a SCF-like complex, consisting of PARK2, CUL1 and FBXW7. Interacts with SNCAIP. Binds to the C2A and C2B domains of SYT11. Interacts and regulates the turnover of SEPT5. Part of a complex, including STUB1, HSP70 and GPR37. The amount of STUB1 in the complex increases during ER stress. STUB1 promotes the dissociation of HSP70 from PARK2 and GPR37, thus facilitating PARK2-mediated GPR37 ubiquitination. HSP70 transiently associates with unfolded GPR37 and inhibits the E3 activity of PARK2, whereas, STUB1 enhances the E3 activity of PARK2 through promotion of dissociation of HSP70 from PARK2-GPR37 complexes. Interacts with PSMD4 and PACRG. Interacts with LRRK2. Interacts with RANBP2. Interacts with SUMO1 but not SUMO2, which promotes nuclear localization and autoubiquitination. Interacts (via first RING-type domain) with AIMP2 (via N-terminus). Interacts with PSMA7 and RNF41. Interacts with PINK1.

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	Subcellular Location: Cytoplasm, cytosol. Nucleus. Endoplasmic reticulum. Mitochondrion. Note=Mainly localizes in the cytosol. Co-localizes with SYT11 in neutrites. Co-localizes with SNCAIP in brainstem Lewy bodies. 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). **Post-translational modifications:** Auto-ubiquitinates in an E2-dependent manner leading to its own degradation. Also polyubiquitinated by RNF41 for proteasomal degradation. S-nitrosylated. The inhibition of PARK2 ubiquitin E3 ligase activity by S-nitrosylation could contribute to the degenerative process in PD by impairing the ubiquitination of PARK2 substrates. DISEASE: Defects in PARK2 are a cause of Parkinson disease (PARK) [MIM:168600]. A complex neurodegenerative disorder characterized by bradykinesia, resting tremor, muscular rigidity and postural instability. Additional features are characteristic postural abnormalities, dysautonomia, dystonic cramps, and dementia. The pathology of Parkinson disease involves the loss of dopaminergic neurons in the substantia nigra and the presence of Lewy bodies (intraneuronal accumulations of aggregated proteins), in surviving neurons in various areas of the brain. The disease is progressive and usually manifests after the age of 50 years, although early-onset cases (before 50 years) are known. The majority of the cases are sporadic suggesting a multifactorial etiology based on environmental and genetic factors. However, some patients present with a positive family history for the disease. Familial forms of the disease usually begin at earlier ages and are associated with atypical clinical features. **Similarity:** Belongs to the RBR family. Parkin subfamily. Contains 1 IBR-type zinc finger. Contains 2 RING-type zinc fingers. Contains 1 ubiquitin-like domain. **Database links:** **Entrez Gene:** 5071 Human **Entrez Gene:** 50873 Mouse **Entrez Gene:** 56816 Rat Omim: 602544 Human

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	SwissProt: O60260 Human **SwissProt:** Q9WVS6 Mouse **SwissProt:** Q9JK66 Rat **Unigene:** 132954 Human **Unigene:** 311110 Mouse **Unigene:** 207194 Rat Mutations in the parkin gene cause patients to develop symptoms of Parkinson's disease very early. Parkin belongs to the RBR protein family and is related to the Ubiquitin-related protein degradation pathway.

[VALIDATION IMAGES]

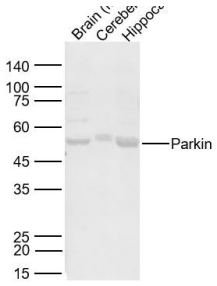


Figure 1. Sample: Lane 1: Mouse Brain Lysates Lane 2: Mouse Cerebellum Lysates Lane 3: Mouse Hippocampus Lysates Primary: Anti-Parkin (SL23687R) at 1/1000 dilution Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution Predicted band size: 51kDa Observed band size: 51kDa

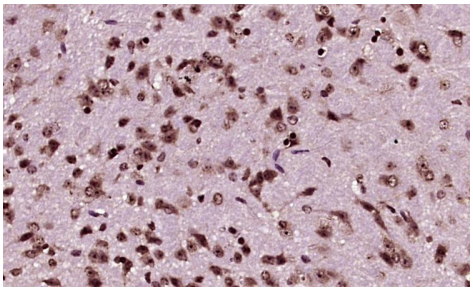


Figure 2. Paraformaldehyde-fixed, paraffin embedded (Mouse brain); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Parkin) Polyclonal Antibody, Unconjugated (SL23687R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructions and DAB staining

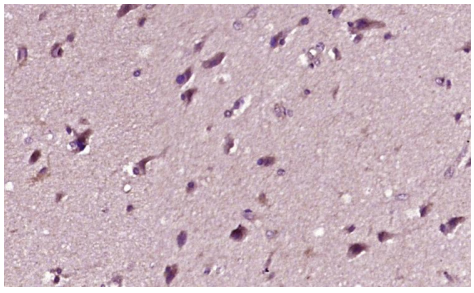


Figure 3. Paraformaldehyde-fixed, paraffin embedded (human brain glioma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (Parkin) Polyclonal Antibody, Unconjugated (SL23687R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining

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