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PARP-2 Polyclonal Antibody

Catalog # AP71777

Product Information

Application	WB
Primary Accession	Q9UGN5
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	66206

Additional Information

Gene ID	10038
Other Names	PARP2; ADPRT2; ADPRTL2; Poly [ADP-ribose] polymerase 2; PARP-2; hPARP-2; ADP-ribosyltransferase diphtheria toxin-like 2; ARTD2; NAD(+) ADP-ribosyltransferase 2; ADPRT-2; Poly[ADP-ribose] synthase 2; pADPRT-2
Dilution	WB~~Western Blot: 1/500 - 1/2000. ELISA: 1/40000. Not yet tested in other applications.
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

Name	PARP2 {ECO:0000303|PubMed:20092359, ECO:0000312|HGNC:HGNC:272}
Function	Poly-ADP-ribosyltransferase that mediates poly-ADP- ribosylation of proteins and plays a key role in DNA repair (PubMed:10364231, PubMed:25043379, PubMed:27471034, PubMed:30104678, PubMed:32028527, PubMed:32939087, PubMed:34108479, PubMed:34486521, PubMed:34874266). Mediates glutamate, aspartate or serine ADP-ribosylation of proteins: the ADP-D-ribosyl group of NAD(+) is transferred to the acceptor carboxyl group of target residues and further ADP-ribosyl groups are transferred to the 2'-position of the terminal adenosine moiety, building up a polymer with an average chain length of 20-30 units (PubMed:25043379, PubMed:30104678, PubMed:30321391). Serine ADP-ribosylation of proteins constitutes the primary form of ADP-ribosylation of proteins in response to DNA damage (PubMed:32939087). Mediates glutamate and aspartate ADP-ribosylation of target proteins in absence of HPF1 (PubMed:25043379). Following interaction with HPF1, catalyzes serine ADP-ribosylation of target proteins; HPF1 conferring serine specificity by completing the PARP2 active site (PubMed:28190768, PubMed:32028527, PubMed:34108479,

PubMed:34486521, PubMed:34874266). PARP2 initiates the repair of double-strand DNA breaks: recognizes and binds DNA breaks within chromatin and recruits HPF1, licensing serine ADP-ribosylation of target proteins, such as histones, thereby promoting decompaction of chromatin and the recruitment of repair factors leading to the reparation of DNA strand breaks (PubMed:10364231, PubMed:32939087, PubMed:34108479). HPF1 initiates serine ADP-ribosylation but restricts the polymerase activity of PARP2 in order to limit the length of poly- ADP-ribose chains (PubMed:34732825, PubMed:34795260). Specifically mediates formation of branched poly-ADP-ribosylation (PubMed:30104678). Branched poly-ADP-ribose chains are specifically recognized by some factors, such as APLF (PubMed:30104678). In addition to proteins, also able to ADP-ribosylate DNA: preferentially acts on 5'-terminal phosphates at DNA strand breaks termini in nicked duplex (PubMed:27471034, PubMed:29361132).

Cellular Location

Nucleus. Chromosome. Note=Recruited to DNA damage sites in a PARP1-dependent process: recognizes and binds poly-ADP-ribose chains produced by PARP1 at DNA damage sites via its N-terminus, leading to its recruitment.

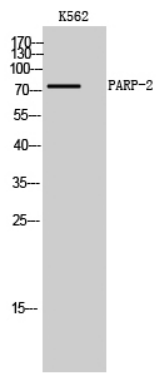
Tissue Location

Widely expressed, mainly in actively dividing tissues (PubMed:10364231). The highest levels are in the brain, heart, pancreas, skeletal muscle and testis; also detected in kidney, liver, lung, placenta, ovary and spleen; levels are low in leukocytes, colon, small intestine, prostate and thymus (PubMed:10364231)

Background

Poly-ADP-ribosyltransferase that mediates poly-ADP- ribosylation of proteins and plays a key role in DNA repair (PubMed:10364231, PubMed:28190768, PubMed:25043379). Mainly mediates glutamate and aspartate ADP-ribosylation of target proteins: the ADP-D-ribosyl group of NAD(+) is transferred to the acceptor carboxyl group of glutamate and aspartate residues and further ADP-ribosyl groups are transferred to the 2'-position of the terminal adenosine moiety, building up a polymer with an average chain length of 20-30 units (PubMed:25043379). ADP- ribosylation follows DNA damage and appears as an obligatory step in a detection/signaling pathway leading to the reparation of DNA strand breaks (PubMed:10364231). Also mediates serine ADP- ribosylation of target proteins following interaction with HPF1; HPF1 conferring serine specificity (PubMed:28190768). In addition to proteins, also able to ADP-ribosylate DNA: preferentially acts on 5'-terminal phosphates at DNA strand breaks termini in nicked duplex (PubMed:27471034).

Images



Western Blot analysis of K562 cells using PARP-2 Polyclonal Antibody cells nucleus extracted by Minute TM Cytoplasmic and Nuclear Fractionation kit (SC-003,Inventbiotech,MN,USA).