PRODUCT INFORMATION

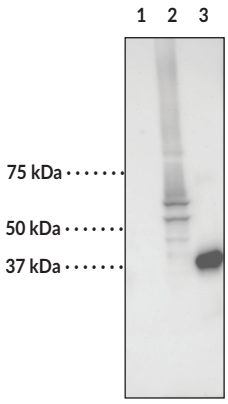
PINK1 Monoclonal Antibody (Clone 3E8)

Item No. 29129

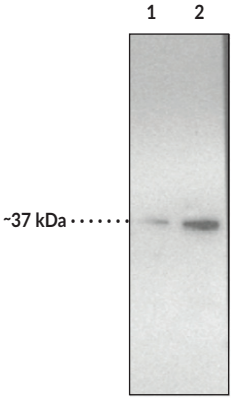
Overview and Properties

Contents:	This vial contains 200 µg of protein A-purified monoclonal antibody.
Synonyms:	BRPK, PARK6, PTEN Induced Putative Kinase 1, PTEN Inducible Kinase 1, Serine/Threonine-Protein Kinase PINK1
Immunogen:	Recombinant human PINK1 amino acids 156-511
Cross Reactivity:	(+) PINK1
Species Reactivity:	(+) Human; other species not tested
Uniprot No.:	Q9BXM7
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone:	3E8
Host:	Mouse
Isotype:	IgG2a
Applications:	ELISA and Western blot (WB); the recommended starting dilution is 1:1,000. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Lane 1: HEK vector control lysate (8 µg)
Lane 2: Human PINK1 transfected HEK lysate (8 µg)
Lane 3: Recombinant human PINK1 (0.02 µg)



Lane 1: Human recombinant PINK1 (10 ng)
Lane 2: Human recombinant PINK1 (30 ng)

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Description

PTEN-induced putative kinase 1 (PINK1) is a serine/threonine protein kinase that has a role in mitochondrial function.[1,2] It is comprised of an N-terminal mitochondrial targeting sequence, a transmembrane domain, a serine/threonine kinase domain, and a C-terminal region.[2] *PINK1* is ubiquitously expressed primarily in the brain, skeletal muscle, and heart.[3] It localizes to the mitochondria where it is either rapidly degraded or, under conditions of low mitochondrial membrane potential, accumulates on the outer mitochondrial membrane, where it recruits and activates the cytosolic E3 ubiquitin ligase Parkin, which targets the mitochondria for mitophagy.[1,3] *Pink1* knockout in rats leads to an age-dependent loss of dopaminergic neurons in the substantia nigra, as well as deficits in motor function and mitochondrial respiration.[4] In mice, *Pink1* knockout does not induce a loss of dopaminergic neurons without concomitant overexpression of α-synuclein in the substantia nigra.[5] Loss-of-function mutations in *PINK1* are causally associated with autosomal recessive early-onset Parkinson's disease.[3,6] Cayman's PINK1 Monoclonal Antibody (Clone 3E8) recognizes primarily the full length protein at about 66 kDa in human tissues. This antibody can be used for ELISA and Western blot applications.

References

1. Trempe, J.-F. and Fon, E.A. Structure and function of parkin, PINK1, and DJ-1, the three musketeers of neuroprotection. *Front. Neurol.* **4**, 38 (2013).
2. Sim, C.H., Gabriel, K., Mills, R.D., *et al.* Analysis of the regulatory and catalytic domains of PTEN-induced kinase-1 (PINK1). *Hum. Mutat.* **33(10)**, 1408-1422 (2012).
3. Barodia, S.K., Creed, R.B., and Goldberg, M.S. Parkin and PINK1 functions in oxidative stress and neurodegeneration. *Brain Res. Bull.* **133**, 51-59 (2017).
4. Creed, R.B. and Goldberg, M.S. New developments in genetic rat models of Parkinson's disease. *Mov. Disord.* **33(5)**, 717-729 (2018).
5. Oliveras-Salvá, M., Macchi, F., Coessens, V., *et al.* Alpha-synuclein-induced neurodegeneration is exacerbated in PINK1 knockout mice. *Neurobiol. Aging* **35(11)**, 2625-2636 (2014).
6. Valente, E.M., Abou-Sleiman, P.M., Caputo, V., *et al.* Hereditary early-onset Parkinson's disease caused by mutations in PINK1. *Science* **304(5674)**, 1158-1160 (2004).

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