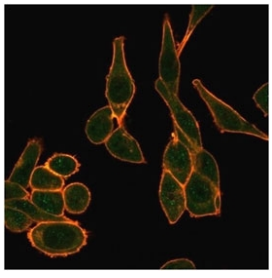
SIRT1 Antibody / Metabolic Stress Regulator [clone PCRP-SIRT1-1E11] (V9647)

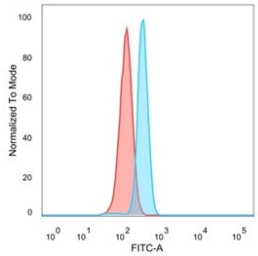
Catalog No.	Formulation	Size
V9647-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V9647-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V9647SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

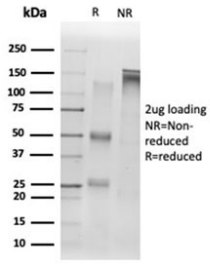
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1
Clone Name	PCRP-SIRT1-1E11
Purity	Protein A/G affinity
UniProt	Q96EB6
Localization	Cytoplasm, Mitochondrion and Nucleus
Applications	ELISA (order BSA-free format for coating) Flow cytometry: 1-2ug/million cells Immunofluorescence: 1-2ug/ml Western blot: 1-2ug/ml
Limitations	This SIRT1 Antibody / Metabolic Stress Regulator is available for research use only.



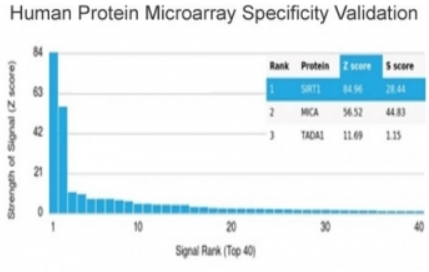
SIRT1 Antibody HeLa Cell IF. Immunofluorescence staining of PFA-fixed human HeLa cells using clone PCRP-SIRT1-1E11 (green) and phalloidin cytoskeletal counterstain (red). Sirtuin 1 / SIRT1 displays predominantly nuclear and cytoplasmic fluorescence consistent with its role as a metabolic stress regulator involved in acetylation-dependent transcriptional control, chromatin signaling, and cellular adaptation to oxidative and nutrient stress pathways.



SIRT1 Antibody HeLa Cell FACS. Flow cytometry analysis of PFA-fixed human HeLa cells stained with clone PCRP-SIRT1-1E11 (blue) and matched isotype control (red). The observed fluorescence shift demonstrates cellular expression of Sirtuin 1 / SIRT1, a NAD-dependent deacetylase involved in metabolic stress signaling, chromatin regulation, and adaptive cellular responses to oxidative and nutrient stress conditions.



SDS-PAGE analysis of purified, BSA-free SIRT1 Antibody / Metabolic Stress Regulator (clone PCRP-SIRT1-1E11) as confirmation of integrity and purity.



SIRT1 Antibody Protein Microarray Validation. Analysis of HuProt(TM) microarray containing more than 19,000 full-length human proteins using clone PCRP-SIRT1-1E11. These results demonstrate selective recognition of Sirtuin 1 / SIRT1, a metabolic stress regulator involved in NAD-dependent deacetylation, chromatin signaling, and adaptive cellular stress-response pathways. Z- and S-score analysis supports preferential binding to the intended target relative to non-specific proteins represented on the HuProt(TM) array. The Z-score represents the signal strength generated by antibody binding to an individual protein relative to the overall array background, while the S-score reflects the relative specificity gap between the top-ranked target and subsequent proteins on the array.

Description

Sirtuin 1 (SIRT1) is a NAD-dependent protein deacetylase involved in regulation of cellular metabolism, stress-response signaling, chromatin remodeling, and energy homeostasis. SIRT1 Antibody / Metabolic Stress Regulator is useful for studying metabolic adaptation, epigenetic signaling pathways, and cellular responses to oxidative and nutrient stress. SIRT1 antibody, also referred to as Sirtuin 1 antibody and NAD-dependent deacetylase antibody in the literature, recognizes a member of the sirtuin family that regulates acetylation-dependent signaling pathways controlling transcriptional activity, metabolic regulation, and cellular survival mechanisms.

SIRT1 is predominantly localized within the nucleus, although cytoplasmic distribution has also been reported depending on cell type and stress conditions. The protein regulates multiple transcription factors and signaling proteins including p53, FOXO family members, NF-kappaB, PGC1-alpha, and histones involved in chromatin organization and stress adaptation pathways. Through deacetylation of these substrates, SIRT1 contributes to regulation of apoptosis, inflammatory signaling, mitochondrial biogenesis, DNA damage responses, and cellular metabolic flexibility under conditions of nutrient limitation and oxidative stress.

Because SIRT1 functions as a central regulator of metabolic stress signaling, this target has become highly relevant in studies focused on aging biology, caloric restriction, cancer metabolism, and chronic disease progression. Altered SIRT1 expression or activity has been associated with metabolic syndrome, cardiovascular disease, neurodegeneration, inflammatory disorders, and tumor progression. In cancer biology, SIRT1 has been linked to transcriptional reprogramming pathways that influence proliferation, stress tolerance, DNA repair, and survival signaling within transformed cells.

SIRT1 also contributes to epigenetic regulation through modulation of histone acetylation and chromatin accessibility associated with lineage-specific transcriptional programs and adaptive cellular responses. The protein participates in

pathways regulating autophagy, mitochondrial function, insulin sensitivity, and oxidative stress resistance, supporting broad interest in SIRT1 across metabolism, longevity, and therapeutic research fields. Because NAD-dependent deacetylation pathways influence multiple interconnected signaling networks, SIRT1 remains an important target for studies examining cellular adaptation to metabolic and environmental stress conditions.

Immunofluorescence and flow cytometry studies commonly demonstrate nuclear and cytoplasmic staining patterns consistent with the multifunctional regulatory role of SIRT1 in stress-response signaling pathways, while protein microarray specificity validation supports selective target recognition in complex proteomic environments. A mouse monoclonal clone PCRP-SIRT1-1E11 antibody can be used for immunofluorescence, flow cytometry, and protein microarray specificity validation studies examining metabolic signaling and epigenetic regulation pathways. Because SIRT1 functions at the intersection of chromatin regulation, stress adaptation, and metabolic signaling, this target remains highly relevant for studies investigating aging biology, cancer metabolism, and cellular energy homeostasis mechanisms.

Researchers studying metabolic signaling, stress-response pathways, and acetylation-dependent transcriptional regulation may also be interested in our broader Signal Transduction Antibodies collection featuring targets involved in chromatin signaling, cellular adaptation, and energy-responsive regulatory mechanisms.

Application Notes

Optimal dilution of the SIRT1 Antibody / Metabolic Stress Regulator should be determined by the researcher.

Immunogen

Recombinant full-length human protein was used as the immunogen for the SIRT1 antibody.

Storage

Aliquot the SIRT1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

SIRT1 metabolic antibody, Sirtuin 1 antibody, NAD-dependent deacetylase antibody, Stress response regulator antibody, Epigenetic metabolism antibody

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