

## DESCRIPTION

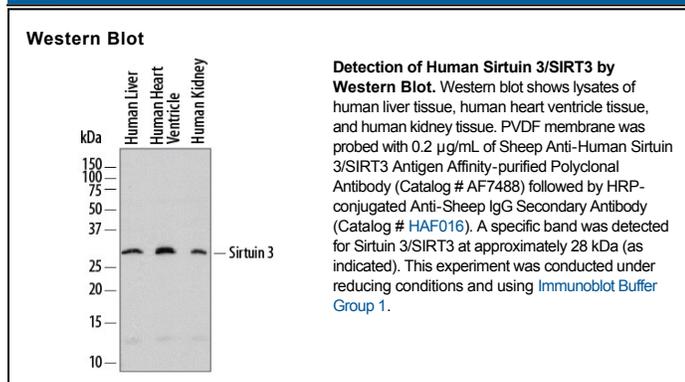
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human Sirtuin 3/SIRT3 in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human SIRT2 is observed.
<b>Source</b>	Polyclonal Sheep IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human Sirtuin 3/SIRT3 Ser101-Lys399 Accession # Q9NTG7
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	0.2 µg/mL	See Below

## DATA



## PREPARATION AND STORAGE

<b>Reconstitution</b>	Sterile PBS to a final concentration of 0.2 mg/mL.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

SIRT3 (SIR2-like protein 3) is a 28-30 kDa, NAD<sup>+</sup>-dependent class III member of the sirtuin protein family. It is widely expressed, and found apparently in both the nucleus, where it deacetylates histones, and in the mitochondrial matrix, where it is involved in the regulation of both oxidative stress and the physiology associated with fasting or caloric restriction. Relative to the mitochondria, SIRT3 deacetylates multiple enzyme substrates, including SOD2, IDH2, LCAD, OTC and HMGCS2, an action that results in enzyme activation. Human SIRT3 is 399 amino acids (aa) in length. It contains a mitochondrial targeting sequence within the first 100 aa, followed by a sirtuin-type deacetylase domain (aa 126-382) that contains an NAD binding segment (aa 145-165). Although uncertainty exists relative to its intracellular location, it would appear that SIRT3 is initially synthesized as a 42-44 kDa "precursor" in the cytosol. From here, it can translocate into mitochondria where it is cleaved between Arg99Arg100 to generate a 28-30 kDa short form. There is one potential alternative start site at Met143. Over aa 101-399, human and mouse SIRT3 share 84% aa sequence identity.