

DESCRIPTION	
Species Reactivity	Human
Specificity	Detects human SCD-1 in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human SCD-5 and recombinant mouse SCD-1 is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human SCD-1 Ala141-Gly221 Accession # O00767
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or 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
Western Blot	0.5 µg/mL	See Below
Knockout Validated	SCD-1 is specifically detected in HeLa human cervical epithelial carcinoma parental cell line but is not detectable in SCD-1 knockout HeLa cell line.	

DATA	
<p>Western Blot</p> <p>Detection of Human SCD-1 by Western Blot. Western blot shows lysates of HepG2 human hepatocellular carcinoma cell line and SK-Mel-28 human malignant melanoma cell line. PVDF membrane was probed with 0.5 µg/mL of Sheep Anti-Human SCD-1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7550) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for SCD-1 at approximately 38 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.</p>	<p>Knockout Validated</p> <p>Western Blot Shows Human SCD-1 Specificity by Using Knockout Cell Line. Western blot shows lysates of HeLa human cervical epithelial carcinoma parental cell line and SCD-1 knockout HeLa cell line (KO). PVDF membrane was probed with 0.5 µg/mL of Sheep Anti-Human SCD-1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF7550) followed by HRP-conjugated Anti-Sheep IgG Secondary Antibody (Catalog # HAF016). A specific band was detected for SCD-1 at approximately 41 kDa (as indicated) in the parental HeLa cell line, but is not detectable in knockout HeLa cell line. GAPDH (Catalog # AF5718) is shown as a loading control. This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.</p>

PREPARATION AND STORAGE	
Reconstitution	Sterile PBS to a final concentration of 0.2 mg/mL.
Shipping	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
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

SCD-1 (Stearoyl-CoA desaturase 1; also Acyl-CoA desaturase, fatty acid desaturase, and Delta-9 desaturase) is a 37-40 kDa member of the fatty acid desaturase family of enzymes. It is an ER-embedded protein that is expressed by multiple cell types, including adipocytes, hepatocytes, macrophages, endothelial and sebaceous gland cells. SCD-1 catalyzes the formation of monounsaturated fatty acids from saturated fatty acids. It does so by generating a double bond between the C9 and C10 carbons of dietary and/or endogenously synthesized fatty acids. This creates either palmitoleic or oleic acid, two fatty acids that are optimally suited for either storage or inclusion into phospholipids. It also removes a potential source of inflammation, as saturated fatty acids are known to activate TLRs with the subsequent onset of inflammation. Human SCD-1 is a 4-transmembrane (TM), 359 amino acid (aa) protein. It contains a 71 aa cytoplasmic N-terminus, followed by two TM segments (aa 72-119) and an extended cytoplasmic region (aa 120-216) that possesses three utilized Ser/Thr phosphorylation sites, two additional TM segments (aa 217-273), and a C-terminal cytoplasmic tail (aa 274-359) that contains most of the catalytic region. There is one potential isoform variant that shows a 13 aa substitution for aa 295-359. Over aa 141-221, human SCD-1 shares 95% aa sequence identity with mouse SCD-1.