Mouse/Rat SP-D Alexa Fluor® 750-conjugated Antibody

Antigen Affinity-purified Polyclonal Sheep IgG
Catalog Number: AF6839S
100 µg

DESCRIPTION

Species Reactivity	Mouse/Rat
Specificity	Detects mouse and rat SP-D in Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant human SP-D is observed.
Source	Polyclonal Sheep IgG
Purification	Antigen Affinity-purified
Immunogen	Chinese hamster ovary cell line CHO-derived recombinant mouse SP-D Ala20-Phe374 Accession # P50404
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.*

Western Blot	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

SP-D (surfactant protein-D; also PSP-D) is a 43 kDa member of the collectin family of innate immune modulators (1 - 5). It is constitutively secreted by alveolar lining cells and epithelium associated with tubular structures. SP-D is found in serum, plasma, broncho-alveolar lavage (BAL) fluid, and amniotic fluid (1, 2, 6). Lung injuries often increase release of SP-D to the circulation (3, 6). Mouse SP-D is synthesized as a 374 amino acid (aa) precursor. Mouse SP-D cDNA encodes a 19 aa signal sequence and a 355 aa mature region with a 25 aa N-terminal linking-region, a 177 aa hydroxyproline and hydroxylysine collagen-like domain, a 46 aa coiled-coil segment, and a 106 aa, C-terminal collectin-like C-type lectin domain (CRD) (5). Mature mouse SP-D shares 72 - 76% aa sequence identity with human, porcine, equine, canine and bovine SP-D, and 92% with rat SP-D. SP-D is usually found as a glycosylated, disulfide-linked 150 kDa α-helical coiled-coil trimer with a “head” of three symmetrical CRDs (2-4, 7). Each CRD recognizes the hydroxides of one monosaccharide, and trimerization allows for the discrimination of monosaccharide patterns specific to microbial pathogens (4, 7, 8). Typically, SP-D forms a higher-order 620 kDa, X-shaped dodecamer through N-terminal disulfide bonds, allowing for even finer discrimination of self vs. nonself carbohydrate patterns and facilitating binding to complex antigens (1). SP-D also binds SIRPα and the calreticulin/CD91 complex on macrophages (9, 10). When the ratio of antigen/pathogen to available CRDs is low, antigen can be bound without occupying all available CRDs. The free CRDs will bind to SIRPα, generating a signal that downmodulates the inflammatory response. During high CRD ligand binding (low SIRPα binding), the dodecamer rearranges to expose N-termini that bind the calreticulin/CD91 complex, an event that initiates inflammation (1). Also, direct and indirect binding of neutrophil defensins and macrophage CD14 and TLRs to SP-D can modulate response to viruses and bacterial lipopolysaccharides (1-3, 11-15). Thus, SP-D allows for a graded response to environmental challenge and clearance of small antigenic insults without the need for a damaging inflammatory response (1-3).

PRODUCT SPECIFIC NOTICES

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475