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InnoCyto Inc.

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Anti-human CD282 (TLR2) Antibody

Catalog Number:	114501, 114502
Size:	25 μg, 100 μg
Target Name:	CD282, TLR2, Toll like receptor 2, TIL4
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	282AM2a
Application:	Flow Cytometry
Reactivity:	Human
Format:	Purified
Isotype:	Mouse IgG2a
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
Protein Concentration:	0.5 mg/mL
Storage&Handling:	The antibody solution should be stored between 2°C and 8°C
Isotype Controls:	301501
Antibody Family:	Human Antibodies

BACKGROUND INFORMATION

Toll-like receptor 2 (TLR2) is a pattern recognition receptor expressed on innate immune cells such as monocytes, macrophages, dendritic cells, and some epithelial cells. It plays a key role in host defense by recognizing conserved microbial components and initiating inflammatory signaling pathways. Upon activation, TLR2 triggers downstream signaling through adaptor proteins like MyD88, leading to NF-κB activation and production of pro-inflammatory cytokines.

Structurally, TLR2 is a type I transmembrane protein composed of an extracellular domain rich in leucine-rich repeats (LRRs) that mediate ligand recognition, a single transmembrane helix, and an intracellular Toll/IL-1 receptor (TIR) domain responsible for signal transduction. TLR2 typically forms heterodimers with TLR1 or TLR6, which expands its ligand specificity.

TLR2 recognizes a broad range of ligands, including bacterial lipoproteins, peptidoglycan, lipoteichoic acid from Gram-positive bacteria, and certain fungal and viral components. Endogenous ligands released during tissue damage can also activate TLR2, linking it to sterile inflammation.

In disease, dysregulated TLR2 signaling contributes to chronic inflammatory conditions, autoimmune diseases, and sepsis. It also plays roles in cancer by influencing tumor-associated inflammation. Therapeutically, TLR2 is being explored as both a target and a tool, with agonists used as vaccine adjuvants and antagonists investigated to reduce harmful inflammation.