Qty: 100µg/400 µL

Rabbit anti-TLR4

For Research Use Only

Catalog No. 36-3700

Lot No.

Rabbit anti-TLR4

FORM

This polyclonal antibody is supplied as a 400 µL aliquot at a concentration of 0.25 mg/mL in phosphate buffered saline (pH 7.4) containing 0.1% sodium azide. This antibody is epitope-affinity purified from rabbit antiserum.

PAD: ZMD.301

IMMUNOGEN

Synthetic peptide derived from the carboxyl termini of various human TLR4 (Toll-like receptor 4) isoforms A-D.

SPECIFICITY

This antibody, specific for human TLR4, shows a positive result for ELISA and detects 2-3 protein species of ~70 to ~100 kDa on Western blot analysis using human placenta tissue homogenate, JEG-3 placenta choriocarcinoma, U-937 histocytic lymphoma, BC-1 human B-lymphocyte lymphoma, Nalm-6-pre-B lymphocyte and REH pre-B lymphocyte cell lysates.

REACTIVITY

Reactivity has been confirmed with human placenta tissue homogenate, JEG-3 placenta choriocarcinoma, U-937 histocytic lymphoma, BC-1 human B-lymphocyte lymphoma, Nalm-6-pre-B lymphocyte and REH pre-B lymphocyte cell lysates. This antibody should be theoretically reactive to gorilla, orangutan and chimpanzee TRL4 due to amino acid homology.

Sample	Western Blotting	ELISA	Imm. Ppt.
Human	+++	ND	0*
Immunogen	N/A	+++	N/A

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)
*No reactivity observed under conditions tested

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

ELISA: 0.1-1µg/mL
Western Blotting: 1-3 µg/mL

STORAGE

Store at 2-8°C for up to one month. Store at –20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

The *Drosophila* receptor, Toll, was initially found to be essential for protective immunity to fungal infections in flies[1]. Toll-like homologs have been identified in organisms as disparate as plants, insects and mammals[2, 3, 4, 5]. Of the ten known members of the mammalian TLR family, four have been shown to initiate inflammatory responses upon recognition of pathogen-derived substances. Toll-like receptors (TLRs) are family of signaling molecules that are required for innate responses to pathogen-derived substances such as lipopolysaccharides (LPS), proteoglycans and bacterial DNA. Innate immunity plays an essential role in the host defense and is crucial for the generation of primary adaptive responses. TLR expression is highly regulated in monocytes and dendritic cells during differentiation and maturation[6].

(cont'd)

Mammalian cells respond to LPS by activating Toll-like receptor 4 (TLR4)[7, 8, 9, 10, 11]. TLR4 was first described as a member of a family of type I integral membrane proteins that contain numerous leucine-rich motifs on their extracellular portions and an intracellular signaling domain homologous to that of the IL-1 receptor[12, 13]. TLR4 initiates a cascade of serine/threonine kinases such as IL-1 receptor-associated kinase (IRAK) in response to LPS, resulting in downstream activation of NF-κB and c-Jun NH_2-terminal kinase which eventually leads to the transcription of genes involved in inflammation[9, 14, 15, 16, 17]. TLR4 requires an accessory protein, MD-2 to respond efficiently to LPS[18]. MD-2 binds to the extracellular domains of both TLR2 and TLR4, causing their surface expression levels to increase[18, 19]. Secreted MD-2 is a large polymeric protein that confers LPS sensitivity to TLR4[20]. LPS binds directly to the TLR4/MD-2 complex and both molecules are in close proximity to the bound LPS[21]. TLR4 is expressed by peripheral blood monocytes and a small population of B-cells and is also expressed in human placenta.

REFERENCES

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RELATED PRODUCTS

Product	*Clone/PAD**	*Cat. No.*
Mouse anti-JNK1	4A2G12	35-9800
RABBIT anti-phospho-JNK	PD183	36-9300
Rabbit anti-NFκB (P50)	ZK50	51-3500
Mouse anti-NFκB (P65)	2A12A7	51-3500
Rabbit anti-NFκB (P65)	P65C	18-7308
Protein A	Sepharose® 4B	10-1041
rec-Protein G	Sepharose® 4B	10-1241

*PAD: Polyclonal Antibody Designation

Conjugate	ZyMAX™ Goat x Rabbit IgG (H+L)	ZyMAX™ Goat x Mouse IgG (H+L)
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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