Human DDR1 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF2396

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human DDR1 in direct ELISAs and Western blots. In sandwich immunoassays, approximately 5% cross-reactivity with recombinant human DDR2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human DDR1 Asp21-Thr416 Accession # Q08345
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

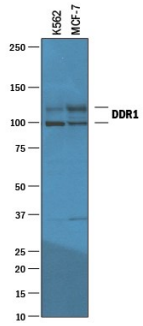
APPLICATIONS

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	1 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Simple Western	10 µg/mL	See Below

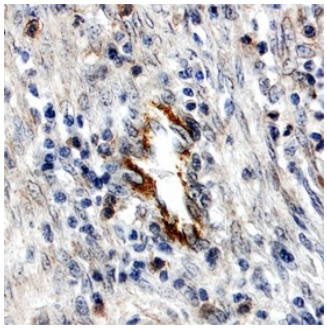
DATA

Western Blot



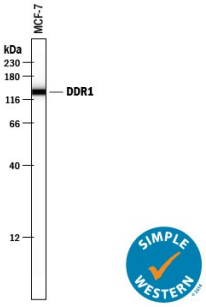
Detection of Human DDR1 by Western Blot. Western blot shows lysates of K562 human chronic myelogenous leukemia cell line and MCF-7 human breast cancer cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human DDR1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2396) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF019). Specific bands were detected for DDR1 at approximately 100 and 120 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



DDR1 in Human Breast Cancer Tissue. DDR1 was detected in immersion fixed paraffin-embedded sections of human breast cancer tissue using Human DDR1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2396) at 15 µg/mL overnight at 4 °C. Before incubation with the primary antibody tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # Catalog # CTS013). Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Simple Western



Detection of Human DDR1 by Simple Western™. Simple Western lane view shows lysates of MCF-7 human breast cancer cell line, loaded at 0.2 mg/mL. A specific band was detected for DDR1 at approximately 137 kDa (as indicated) using 10 µg/mL of Goat Anti-Human DDR1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2396) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

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PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 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

DDR1, also known as CAK, CD167a, RTK6, and TrkE, is a 120-140 kDa type I transmembrane glycoprotein that belongs to the discoidin-like domain containing subfamily of receptor tyrosine kinases. Mature human DDR2 consists of a 398 amino acid (aa) extracellular domain (ECD) that includes the discoidin-like domain, a 27 aa transmembrane segment, and a 470 aa cytoplasmic region with a tyrosine kinase domain. Within the ECD, human DDR1 shares 53% aa sequence identity with human DDR2 and 93% with mouse and rat DDR1. DDR1 is expressed on epithelial tissues, activated monocytes and neutrophils, and in several cancers. Compared to isoform DDR1b, DDR1a lacks 37 aa's that include a Shc-interacting NPxY motif in the cytoplasmic juxtamembrane region. Two additional kinase deficient splice forms are expressed in colon cancer. The discoidin-like domain mediates binding to collagens I-V. DDR1 selectively recognizes the triple helical structure of collagen. It is expressed on the cell surface as a dimer which can include different isoforms. DDR1 oligomerization enhances collagen binding and also modulates collagen fibrillogenesis. The transmembrane segment contains a leucine zipper and GxxxG motif, but neither is exclusively required for dimerization. Collagen binding induces prolonged autophosphorylation, including the NPxY motif. Collagen binding also results in the proteolytic cleavage of a tyrosine phosphorylated 60 kDa C-terminal fragment (CTF), and a 60 kDa ECD fragment. TIMP3 and TAPI-1 inhibit shedding of the ECD fragment but not the CTF. Over-expression of DDR1a promotes MMP-2 activation and results in an increased invasiveness of a glioblastoma cell line; DDR1b does not.

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