

DESCRIPTION	
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human DDR1 in direct ELISAs and Western blots. In sandwich immunoassays, approximately 5% cross-reactivity with recombinant human DDR2 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human DDR1 Asp21-Thr416 Accession # Q08345
<b>Endotoxin Level</b>	<0.10 EU per 1 µg of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

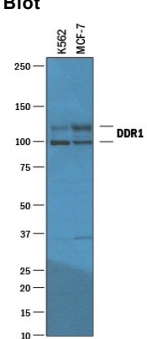
**APPLICATIONS**

**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
<b>Western Blot</b>	1 µg/mL	See Below
<b>Immunohistochemistry</b>	5-15 µg/mL	See Below
<b>Simple Western</b>	10 µg/mL	See Below

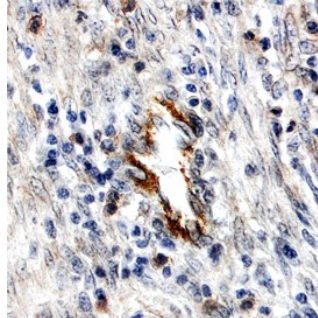
**DATA**

**Western Blot**



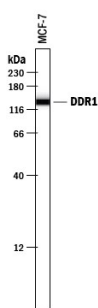
**Detection of Human DDR1 by Western Blot.** Western blot shows lysates of K562 human chronic myelogenous leukemia cell line and MCF-7 human breast cancer cell line. PVDF membrane was probed with 1 µg/mL of Goat Anti-Human DDR1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2396) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # 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 # CTS013). Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; 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 # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.



**PREPARATION AND STORAGE**

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

#### 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.