

DESCRIPTION	
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human DDR1 in direct ELISAs and Western blots. In direct ELISAs and Western blots, this antibody does not cross-react with recombinant human DDR2.
<b>Source</b>	Monoclonal Mouse IgG <sub>2A</sub> Clone # 290420
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human DDR1 Asp19-Thr416 Accession # Q08345
<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 either lyophilized or 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>Immunoprecipitation</b>	25 µg/mL	HeLa human cervical epithelial carcinoma cell line, <a href="#">see our available Western blot detection antibodies</a>

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 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 (1, 2). 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 (3). 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 (2, 4). Compared to isoform DDR1b, DDR1a lacks 37 aa's that include a Shc-interacting NPXY motif in the cytoplasmic juxtamembrane region (5). Two additional kinase deficient splice forms are expressed in colon cancer (6). The discoidin-like domain mediates binding to collagens I - V (1, 7, 8). DDR1 selectively recognizes the triple helical structure of collagen (7, 8). It is expressed on the cell surface as a dimer which can include different isoforms (5, 9). DDR1 oligomerization enhances collagen binding and also modulates collagen fibrillogenesis (10, 11). The transmembrane segment contains a leucine zipper and GxxxG motif, but neither is exclusively required for dimerization (9). Collagen binding induces prolonged autophosphorylation, including the NPXY motif (7, 8). Collagen binding also results in the proteolytic cleavage of a tyrosine phosphorylated 60 kDa C-terminal fragment (CTF), and a 60 kDa ECD fragment (12, 13). TIMP3 and TAPI-1 inhibit shedding of the ECD fragment but not the CTF (12). Overexpression of DDR1a promotes MMP-2 activation and results in an increased invasiveness of a glioblastoma cell line; DDR1b does not (14).

### References:

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