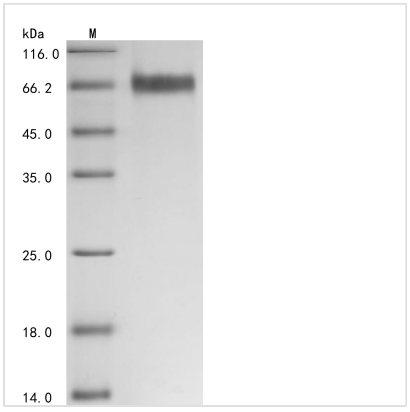
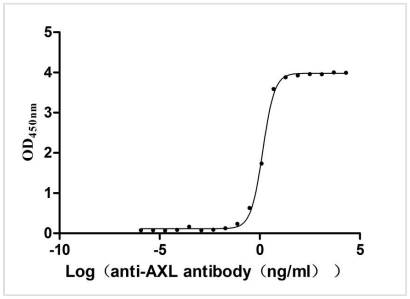
Recombinant Human Tyrosine-protein kinase receptor UFO(AXL),partial (Active)

Product Code	CSB-MP326981HUd7
Abbreviation	Recombinant Human AXL protein, partial (Active)
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P30530
Form	Lyophilized powder
Storage Buffer	Lyophilized from a 0.2 μm filtered PBS, 6% Trehalose, pH 7.4
Product Type	Recombinant Protein
Immunogen Species	Homo sapiens (Human)
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized human AXL at 2 μg/mL can bind Anti-AXL recombinant antibody(CSB-RA326981MA1HU). The EC50 is 1.308-1.500 ng/mL.
Purity	Greater than 95% as determined by SDS-PAGE.
Sequence	APRGTQAEESPFVGNPGNITGARGLTGTLRCQLQVQGEPPEVHWLRDGQILE LADSTQTQVPLGEDEQDDWIVVSQLRITSLQLSDTGQYQCLVFLGHQTFVSQP GYVGLEGLPYFLEEPEDRTVAANTPFNLSCQAQGPPEPVDLLWLQDAVPLAT APGHGPQRSLHVPGLNKTSSFSCEAHNAKGVTTSRTATITVLPQQPRNLHLVS RQPTELEVAWTPGLSGIYPLTHCTLQAVLSDDGMGIQAGEPDPPEEPLTSQAS VPPHQLRLGSLHPHTPYHIRVACTSSQGPSSWTHWLPVETPEGVPLGPPENIS ATRNGSQAFVHWQEPRAPLQGTLLGYRLAYQGQDTPEVLMDIGLRQEVTLEL QGDGSVSNLTVCVAAYTAAGDGPWSLPVPLEAWRPGQAQPVHQLVKEPSTP AFSWPWW
Source	Mammalian cell
Target Names	AXL
Expression Region	26-451aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	C-terminal 10xHis-tagged
Mol. Weight	48.9 kDa
Protein Length	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.



Activity
Measured by its binding ability in a functional ELISA. Immobilized human AXL at 2 μg/ml can bind Anti-AXL recombinant antibody(CSB-RA326981MA1HU). The EC_{50} is 1.308-1.500 ng/mL.

Description

Producing the recombinant human tyrosine-protein kinase receptor UFO (AXL) involves a coherent set of steps: gene cloning, plasmid design, expression, purification, and analysis. The gene segment encoding 26-451aa of AXL is amplified using designed primers and inserted into a plasmid with a C-terminal 10xHis-tag. After transfection of mammalian cells with the recombinant plasmid, a selective antibiotic is applied 24 hours later to screen cells expressing the target AXL protein. The selected cells are cultured for protein expression. Following cell lysis, the AXL protein is purified using Ni-NTA affinity chromatography from the supernatant. SDS-PAGE confirms the recombinant AXL protein purity exceeds 95%. The endotoxin levels of the AXL protein are measured at <1.0 EU/μg via the LAL method. Functional ELISA validates this recombinant AXL protein binding to the AXL recombinant antibody (CSB-RA326981MA1HU), with an EC_{50} of 1.308-1.500 ng/mL.

Human AXL is a member of the TAM (Tyro3, AXL, Mer) family of receptor tyrosine kinases. AXL plays a pivotal role in various cellular processes, including cell survival, proliferation, migration, and angiogenesis. AXL is activated by its ligand, growth arrest-specific 6 (Gas6), which induces receptor dimerization and subsequent autophosphorylation, triggering downstream signaling pathways that can promote tumorigenesis and metastasis [4][6][10].

AXL is overexpressed in several cancer types, including breast, lung, and colorectal cancers. Its expression is often associated with poor prognosis and therapeutic resistance. Studies have shown that AXL mediates resistance to therapies targeting the EGFR in cancers such as head and neck squamous cell carcinoma and triple-negative breast cancer [1][2][7]. This resistance is partly due to AXL's ability to activate alternative signaling pathways that circumvent the inhibited EGFR, thereby allowing cancer cells to survive and proliferate

despite treatment [11][13].

AXL has also been implicated in viral infections, notably as a receptor for the Zika virus [6][14]. The receptor's involvement in immune modulation and angiogenesis further underscores its importance in both cancer progression and potential therapeutic strategies [3][12]. Given its multifaceted roles, AXL is being explored as a therapeutic target, with strategies aimed at inhibiting its function showing promise in preclinical models [5][8][9].

References:

[1] Brand, T., Iida, M., Stein, A., Corrigan, K., Braverman, C., Luthar, N., … & Wheeler, D. (2014). Axl mediates resistance to cetuximab therapy. Cancer Research, 74(18), 5152-5164. https://doi.org/10.1158/0008-5472.can-14-0294
[2] Elkabets, M., Pazarentzos, E., Juric, D., Sheng, Q., Pelossof, R., Brook, S., … & Baselga, J. (2015). Axl mediates resistance to pi3kα inhibition by activating the egfr/pkc/mtor axis in head and neck and esophageal squamous cell carcinomas. Cancer Cell, 27(4), 533-546. https://doi.org/10.1016/j.ccell.2015.03.010
[3] Han, Y., Li, G., Zhang, Z., Zhang, X., Zhao, B., & Yang, H. (2023). Axl promotes intracranial aneurysm rupture by regulating macrophage polarization toward m1 via stat1/hif-1α. Frontiers in Immunology, 14. https://doi.org/10.3389/fimmu.2023.1158758
[4] Jin, G., Wang, Z., Wang, J., Zhang, L., Chen, Y., Yuan, P., … & Liu, D. (2016). Expression of axl and its prognostic significance in human breast cancer. Oncology Letters, 13(2), 621-628. https://doi.org/10.3892/ol.2016.5524
[5] Kariolis, M., Miao, Y., Jones, D., Kapur, S., Mathews, I., Giaccia, A., … & Cochran, J. (2014). An engineered axl 'decoy receptor' effectively silences the gas6-axl signaling axis. Nature Chemical Biology, 10(11), 977-983. https://doi.org/10.1038/nchembio.1636
[6] Li, S., DeLalio, L., Isakson, B., & Wang, T. (2016). Axl-mediated productive infection of human endothelial cells by zika virus. Circulation Research, 119(11), 1183-1189. https://doi.org/10.1161/circresaha.116.309866
[7] Meyer, A., Miller, M., Gertler, F., & Lauffenburger, D. (2013). The receptor axl diversifies egfr signaling and limits the response to egfr-targeted inhibitors in triple-negative breast cancer cells. Science Signaling, 6(287). https://doi.org/10.1126/scisignal.2004155
[8] Onken, J., Torka, R., Korsing, S., Radke, J., Krementeskaia, I., Nieminen, M., … & Vajkoczy, P. (2016). Inhibiting receptor tyrosine kinase axl with small molecule inhibitor bms-777607 reduces glioblastoma growth, migration, and invasion in vitro and in vivo. Oncotarget, 7(9), 9876-9889. https://doi.org/10.18632/oncotarget.7130
[9] Scaltriti, M., Elkabets, M., & Baselga, J. (2016). Molecular pathways: axl, a membrane receptor mediator of resistance to therapy. Clinical Cancer Research, 22(6), 1313-1317. https://doi.org/10.1158/1078-0432.ccr-15-1458
[10] Scherschinski, L., Prem, M., Kremenetskaia, I., Tinhofer, I., Vajkoczy, P., Karbe, A., … & Onken, J. (2022). Regulation of the receptor tyrosine kinase axl in response to therapy and its role in therapy resistance in glioblastoma. International Journal of Molecular Sciences, 23(2), 982. https://doi.org/10.3390/ijms23020982
[11] Su, C., Hsu, T., Sung, S., Huang, M., Chen, K., Huang, C., … & Liao, P.

(2021). axl is crucial for e1a?enhanced therapeutic efficiency of egfr tyrosine kinase inhibitors through nfi in breast cancer. Environmental Toxicology, 36(7), 1278-1287. https://doi.org/10.1002/tox.23125
[12] Tanaka, M. and Siemann, D. (2019). Axl signaling is an important mediator of tumor angiogenesis. Oncotarget, 10(30), 2887-2898. https://doi.org/10.18632/oncotarget.26882
[13] Tsukita, Y., Fujino, N., Miyauchi, E., Saito, R., Fujishima, F., Itakura, K., … & Ichinose, M. (2019). Axl kinase drives immune checkpoint and chemokine signalling pathways in lung adenocarcinomas. Molecular Cancer, 18(1). https://doi.org/10.1186/s12943-019-0953-y
[14] Zwernik, S., Adams, B., Raymond, D., Kassam, A., Rovin, R., & Akhtar, P. (2021). Axl receptor is required for zika virus strain mr-766 infection in human glioblastoma cell lines. Molecular Therapy — Oncolytics, 23, 447-457. https://doi.org/10.1016/j.omto.2021.11.001

Endotoxin	Less than 1.0 EU/ug as determined by LAL method.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.