Anti-ENO1/ENO2 Antibody [PSH26-92] - BSA and Azide free

HA752053

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat, Green monkey, Pig
Applications:	WB, IF-Cell, IHC-P, FC(Intra)
Molecular Wt:	Predicted band size: 47 kDa
Clone number:	PSH26-92

Description: Enolase 1 (ENO1), more commonly known as alpha-enolase, is a glycolytic enzyme expressed in most tissues, one of the isozymes of enolase. Each isoenzyme is a homodimer composed of 2 alpha, 2 gamma, or 2 beta subunits, and functions as a glycolytic enzyme. Alpha-enolase, in addition, functions as a structural lens protein (tau-crystallin) in the monomeric form. Alternative splicing of this gene results in a shorter isoform that has been shown to bind to the c-myc promoter and function as a tumor suppressor. Several pseudogenes have been identified, including one on the long arm of chromosome 1. Alpha-enolase has also been identified as an autoantigen in Hashimoto encephalopathy. Gamma-enolase, also known as enolase 2 (ENO2) or neuron specific enolase (NSE), is an enzyme that in humans is encoded by the ENO2 gene. Gamma-enolase is a phosphopyruvate hydratase. Gamma-enolase is one of the three enolase isoenzymes found in mammals. This isoenzyme, a homodimer, is found in mature neurons and cells of neuronal origin. A switch from alpha enolase to gamma enolase occurs in neural tissue during development in rats and primates.

Immunogen: Synthetic peptide within human ENO1 aa 51-100 and human ENO2 aa 51-100.

Positive control: HeLa (Human cervical adenocarcinoma cell) cell lysate, HEK-293 (Human embryonic kidney cell) cell lysate, SH-SY5Y (Human neuroblastoma cell) cell lysate, Hep G2 (Human liver cancer cell) cell lysate, MCF7 (Human breast cancer cell) cell lysate, RD (Human malignant embryonal rhabdomyosarcoma cell) cell lysate, Jurkat (Human T-lymphoblastic cells) cell lysate, COS-1 (African green monkey kidney fibroblast) cell lysate, NIH/3T3 (Mouse fibroblast) cell lysate, C2C12 (Mouse myoblast) cell lysate, RAW264.7 (Mouse monocytic macrophage leukemia cell) cell lysate, C6 (Rat glioma cell) cell lysate, PC-12 (Rat pheochromocytoma cell (undifferentiated)) cell lysate, Mouse brain tissue lysate, Mouse kidney tissue lysate, Mouse heart tissue lysate, Mouse liver tissue lysate, Mouse pancreas tissue lysate, Rat brain tissue lysate, Rat kidney tissue lysate, Rat heart tissue lysate, Rat liver tissue lysate, Rat pancreas tissue lysate, Pig brain tissue lysate, Pig cerebellum tissue lysate, Pig spleen tissue lysate.

Subcellular location: Cytoplasm, Cell membrane, myofibril, sarcomere, M line.

Database links: SwissProt: P06733 Human | P09104 Human | P17182 Mouse | P17183 Mouse | P04764 Rat | P07323 Rat

Recommended Dilutions:

WB	1:5,000
IF-Cell	1:100
IHC-P	1:200-1:1,000
FC(Intra)	1:1,000

Storage Buffer: PBS (pH7.4).

Images

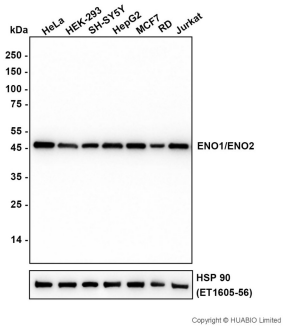

Fig1: Western blot analysis of ENO1/ENO2 on different lysates with Rabbit anti-ENO1/ENO2 antibody (HA752053) at 1/5,000 dilution.

Lane 1: HeLa (Human cervical adenocarcinoma cell) cell lysate
Lane 2: HEK-293 (Human embryonic kidney cell) cell lysate
Lane 3: SH-SY5Y (Human neuroblastoma cell) cell lysate
Lane 4: Hep G2 (Human liver cancer cell) cell lysate
Lane 5: MCF7 (Human breast cancer cell) cell lysate
Lane 6: RD (Human malignant embryonal rhabdomyosarcoma cell) cell lysate
Lane 7: Jurkat (Human T-lymphoblastic cells) cell lysate

Lysates/proteins at 15 µg/Lane.
Exposure time: 4 seconds; ECL: K1801

Blocking: 5% NFDM/TBST, 1 hour at room temperature
Primary antibody: HA752053, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 °C
Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 47 kDa
Observed band size: 47 kDa

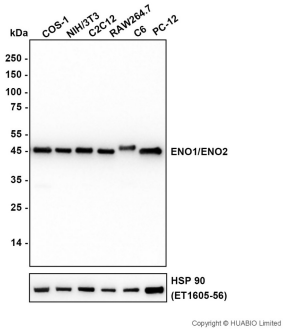

Fig2: Western blot analysis of ENO1/ENO2 on different lysates with Rabbit anti-ENO1/ENO2 antibody (HA752053) at 1/5,000 dilution.

Lane 1: COS-1 (African green monkey kidney fibroblast) cell lysate
Lane 2: NIH/3T3 (Mouse fibroblast) cell lysate
Lane 3: C2C12 (Mouse myoblast) cell lysate
Lane 4: RAW264.7 (Mouse monocytic macrophage leukemia cell) cell lysate
Lane 5: C6 (Rat glioma cell) cell lysate
Lane 6: PC-12 (Rat pheochromocytoma cell (undifferentiated)) cell lysate

Lysates/proteins at 15 µg/Lane.
Exposure time: 4 seconds; ECL: K1801

Blocking: 5% NFDM/TBST, 1 hour at room temperature
Primary antibody: HA752053, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 °C
Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 47 kDa

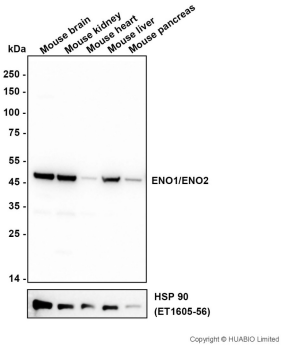

Fig3: Western blot analysis of ENO1/ENO2 on different lysates with Rabbit anti-ENO1/ENO2 antibody (HA752053) at 1/5,000 dilution.

Lane 1: Mouse brain tissue lysate
Lane 2: Mouse kidney tissue lysate
Lane 3: Mouse heart tissue lysate
Lane 4: Mouse liver tissue lysate
Lane 5: Mouse pancreas tissue lysate

Lysates/proteins at 20 µg/Lane.
Exposure time: 4 seconds; ECL: K1801

Blocking: 5% NFDM/TBST, 1 hour at room temperature
Primary antibody: HA752053, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 °C
Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 47 kDa
Observed band size: 47 kDa

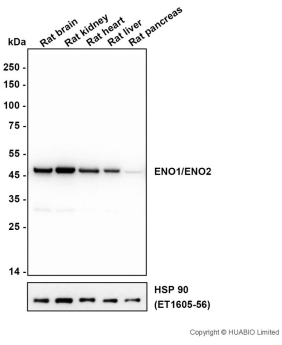

Fig4: Western blot analysis of ENO1/ENO2 on different lysates with Rabbit anti-ENO1/ENO2 antibody (HA752053) at 1/5,000 dilution.

Lane 1: Rat brain tissue lysate
Lane 2: Rat kidney tissue lysate
Lane 3: Rat heart tissue lysate
Lane 4: Rat liver tissue lysate
Lane 5: Rat pancreas tissue lysate

Lysates/proteins at 20 µg/Lane.
Exposure time: 4 seconds; ECL: K1801

Blocking: 5% NFDM/TBST, 1 hour at room temperature
Primary antibody: HA752053, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 °C
Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 47 kDa
Observed band size: 47 kDa

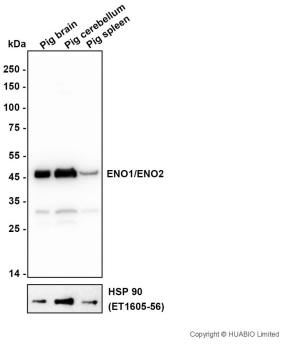

Fig5: Western blot analysis of ENO1/ENO2 on different lysates with Rabbit anti-ENO1/ENO2 antibody (HA752053) at 1/5,000 dilution.

Lane 1: Pig brain tissue lysate
Lane 2: Pig cerebellum tissue lysate
Lane 3: Pig spleen tissue lysate

Lysates/proteins at 20 µg/Lane.
Exposure time: 4 seconds; ECL: K1801

Blocking: 5% NFDM/TBST, 1 hour at room temperature
Primary antibody: HA752053, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 °C
Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 47 kDa
Observed band size: 47 kDa

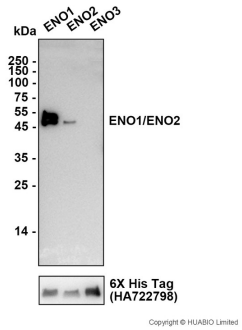

Fig6: Western blot analysis of ENO1/ENO2 on different lysates with Rabbit anti-ENO1/ENO2 antibody (HA752053) at 1/5,000 dilution.

Lane 1: His-tagged Human ENO1 recombinant protein
Lane 2: His-tagged Human ENO2 recombinant protein
Lane 3: His-tagged Human ENO3 recombinant protein

Lysates/proteins at 20 ng/Lane.
Exposure time: 3 minutes; ECL: K1801

Blocking: 5% NFDM/TBST, 1 hour at room temperature
Primary antibody: HA752053, 1/5,000 in primary antibody dilution buffer (K1803), overnight at 4 ℃
Secondary antibody: Goat anti-Rabbit IgG-HRP (HA1001), 1/50,000 in 5% NFDM/TBST, 1 hour at room temperature

Predicted band size: 47 kDa
Observed band size: 47 kDa

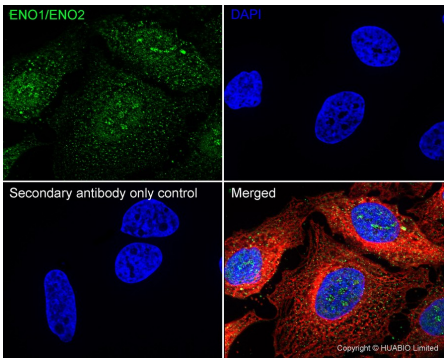

Fig7: Application: Immunocytochemistry (IF-cell)

Species: Human
Sample: HeLa (Human cervix adenocarcinoma epithelial cell)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Triton X-100, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 1 hour at room temperature.
Antibody dilution buffer: 1% BSA in PBST.

Primary antibody: HA752053, 1/100, overnight at 4°C.
Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 45 minutes at room temperature.
Counterstain: Beta tubulin (HA601187, Red), 1/100, overnight at 4℃. The nuclear counterstain was DAPI (Blue).

Subcellular localization consistent with literature. (PMID: 28525970)

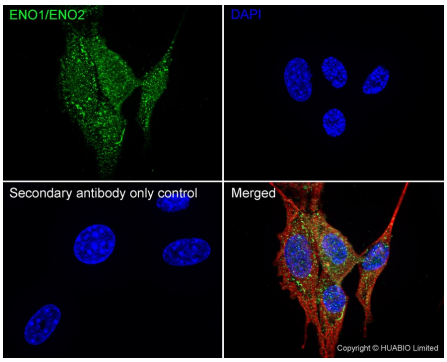

Fig8: Application: Immunocytochemistry (IF-cell)

Species: Mouse
Sample: NIH/3T3 (Mouse fibroblast)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Triton X-100, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 1 hour at room temperature.
Antibody dilution buffer: 1% BSA in PBST.

Primary antibody: HA752053, 1/100, overnight at 4°C.
Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 45 minutes at room temperature.
Counterstain: Beta tubulin (HA601187, Red), 1/100, overnight at 4℃. The nuclear counterstain was DAPI (Blue).

Subcellular localization consistent with literature. (PMID: 28525970)

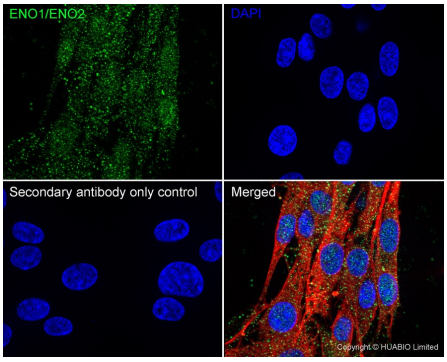

Fig9: Application: Immunocytochemistry (IF-cell)

Species: Rat
Sample: C6 (Rat glioma cell)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Triton X-100, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 1 hour at room temperature.
Antibody dilution buffer: 1% BSA in PBST.

Primary antibody: HA752053, 1/100, overnight at 4°C.
Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 45 minutes at room temperature.
Counterstain: Beta tubulin (HA601187, Red), 1/100, overnight at 4℃. The nuclear counterstain was DAPI (Blue).

Subcellular localization consistent with literature. (PMID: 28525970)

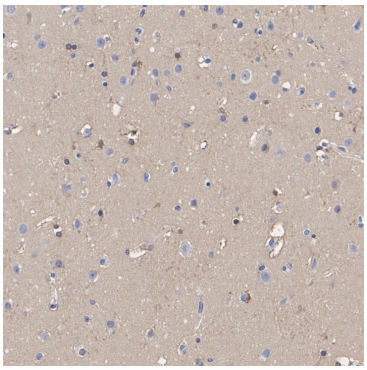

Fig10: Application: Immunohistochemistry (IHC-P)

Species: Human
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA752053, 1/200, 1 hour at room temperature.
Secondary antibody: HA1119, 20 minutes at room temperature.

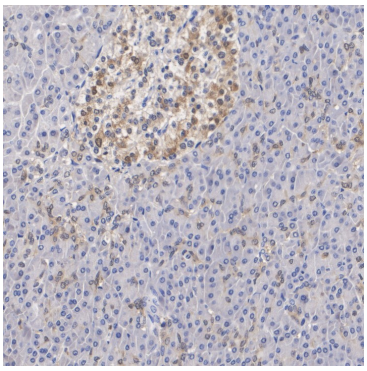

Fig11: Application: Immunohistochemistry (IHC-P)

Species: Human
Tissue: Pancreas
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA752053, 1/1,000, 1 hour at room temperature.
Secondary antibody: HA1119, 20 minutes at room temperature.

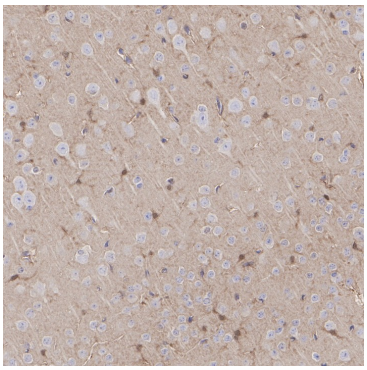

Fig12: Application: Immunohistochemistry (IHC-P)

Species: Mouse
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA752053, 1/1,000, 1 hour at room temperature.
Secondary antibody: HA1119, 20 minutes at room temperature.

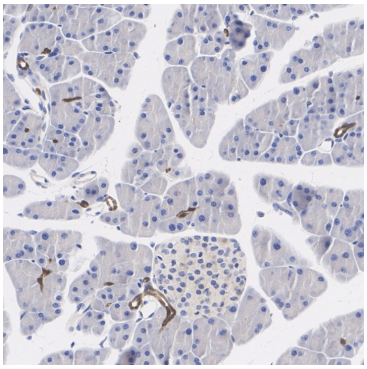

Fig13: Application: Immunohistochemistry (IHC-P)

Species: Mouse
Tissue: Pancreas
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA752053, 1/1,000, 1 hour at room temperature.
Secondary antibody: HA1119, 20 minutes at room temperature.

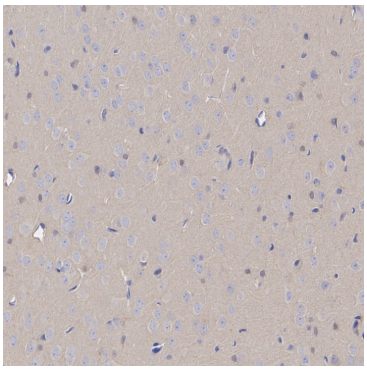

Fig14: Application: Immunohistochemistry (IHC-P)

Species: Rat
Tissue: Brain
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA752053, 1/200, 1 hour at room temperature.
Secondary antibody: HA1119, 20 minutes at room temperature.

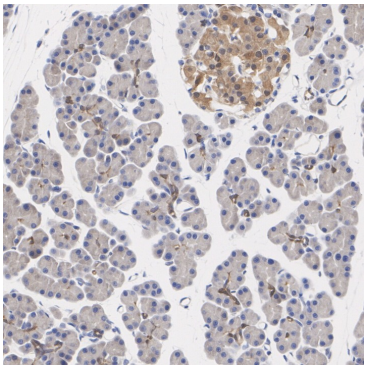

Fig15: Application: Immunohistochemistry (IHC-P)

Species: Rat
Tissue: Pancreas
Sample: Paraffin-embedded section

Antigen retrieval: Heat-mediated, Tris-EDTA buffer (pH 9.0), 20 minutes at 95°C.

Wash buffer: 1× TBST
Endogenous peroxidase blocking: 3% H_2O_2, 10 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 10 minutes at room temperature.
Primary antibody: HA752053, 1/1,000, 1 hour at room temperature.
Secondary antibody: HA1119, 20 minutes at room temperature.

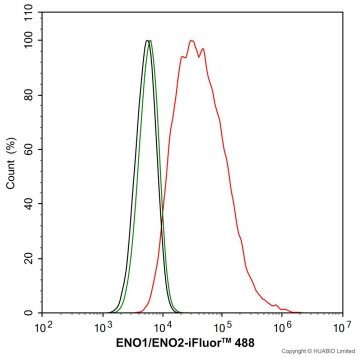

Fig16: Application: Flow Cytometry (Intra)

Species: Human
Sample: HeLa (Human cervix adenocarcinoma epithelial cell)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Tween-20, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 15 minutes at room temperature.
Antibody dilution buffer: 1x PBS.

Primary antibody: HA752053 (1/1,000, Red) compared with Rabbit IgG Isotype Control (HA722127, Green), 15 minutes at room temperature.
Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 15 minutes at room temperature.

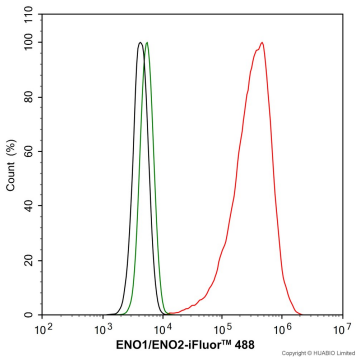

Fig17: Application: Flow Cytometry (Intra)

Species: Mouse
Sample: NIH/3T3 (Mouse fibroblasts)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Tween-20, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 15 minutes at room temperature.
Antibody dilution buffer: 1x PBS.

Primary antibody: HA752053 (1/1,000, Red) compared with Rabbit IgG Isotype Control (HA722127, Green), 15 minutes at room temperature.
Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 15 minutes at room temperature.

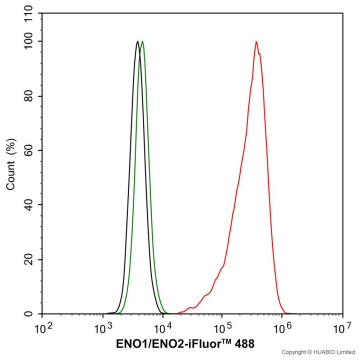

Fig18: Application: Flow Cytometry (Intra)

Species: Rat
Sample: C6 (Rat glioma cells)

Fixation: 4% Paraformaldehyde, 15 minutes at room temperature.
Permeabilization: 0.1% Tween-20, 15 minutes at room temperature.
Blocking: 1% BSA + 10% normal goat serum, 15 minutes at room temperature.
Antibody dilution buffer: 1x PBS.

Primary antibody: HA752053 (1/1,000, Red) compared with Rabbit IgG Isotype Control (HA722127, Green), 15 minutes at room temperature.
Secondary antibody: Goat Anti-Rabbit IgG (iFluor™ 488, HA1121), 15 minutes at room temperature.

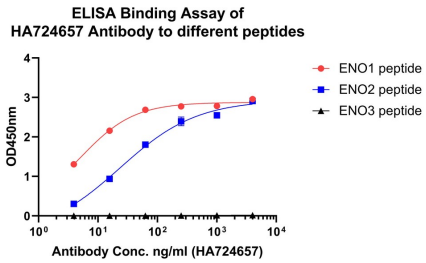

Fig19: Application: Enzyme-Linked Immunosorbent Assay (ELISA)

HA724657 can recognize both ENO1 and ENO2 peptides, but not ENO3 peptide.

Background References

1. Li Y et al. Role of ENO1 and its targeted therapy in tumors. J Transl Med. 2024 Nov
2. Tang J et al. ENO2 drives tumor cell-induced M2 macrophage polarization to promote colorectal cancer liver metastasis. Signal Transduct Target Ther. 2026 May