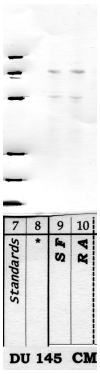
Anti-DPP10 Rabbit Polyclonal Antibody

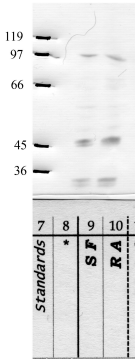
Inactive dipeptidyl peptidase 10, Dipeptidyl peptidase IV-related protein 3, DPRP-3, Dipeptidyl peptidase X, DPP X, Dipeptidyl peptidase-like protein 2, DPL2,

Gene: DPP10 **UniProt:** Q8N608 **Host:** Rabbit **Clonality:** Polyclonal (pAb)

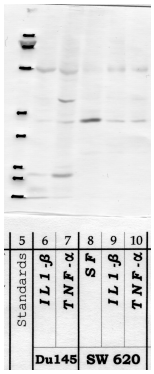
Product Image



Stalk region
RP1DPP10



Â Spacer Region
RP2DPP10



Catalytic domain
RP3DPP10

— Western Blot (3-panel validation across domain-specific antibody clones)

Actual Western blot validation for anti-DPP10 rabbit polyclonal antibody. 3-panel validation across domain-specific antibody clones — each panel labeled with its catalog number and target domain. Reducing conditions; 10–20 µg/lane on 7.5–10% SDS-PAGE.

Key Product Facts

Supplier	Triple Point Biologics, Inc. (Sudbury, Ontario, Canada)
Product Name	Anti-DPP10 Rabbit Polyclonal Antibody
Gene Symbol	DPP10
Alternative Names	Inactive dipeptidyl peptidase 10, Dipeptidyl peptidase IV-related protein 3, DPRP-3, Dipeptidyl peptidase X, DPP X, Dipeptidyl peptidase-like protein 2, DPL2,
UniProt ID	Q8N608
Host Species	Rabbit
Clonality	Polyclonal (pAb)
Isotype	IgG
Concentration	1mg/ml
Purity	Affinity purified
Pack Size	100ug
Validated Application	WB
Recommended Dilution	WB-1/1000
Species Reactivity	Validated- Human Potential-
Immunogen Type	Synthetic Peptide from Uniprot Sequence
Conjugation	none
Buffer / Preservatives	Sodium Chloride 500 mM, Sodium Phosphate 10 mM, Potassium Phosphate 1.8 mM, Potassium Chloride 2.7 mM, Glycerol 50% (v/v)
Website	triplepointbiologics.com/anti-dpp-10-rabbit-polyclonal-antibody

Available Domain-Specific Variants

Triple Point Biologics produces antibodies to defined structural domains of DPP10. Each variant is directed at a specific structural region of the protein. Exact peptide sequences are proprietary; each variant is validated for the applications listed.

Domain / Variant	Epitope Region (approx. residues)	Cat. No.	Availability

Stalk Region	**15–34** Region within the extracellular stalk segment of human DPP-10, situated immediately distal to the single transmembrane anchor and proximal to the large C-terminal β-propeller ectodomain; this juxtamembrane extracellular region is implicated in physical association with Kv4 α-subunit complexes	RP1DPP10	In catalog
Â Spacer Region	**~141–280** Region spanning the spacer segment of the extracellular domain of human DPP-10, located between the membrane-proximal stalk and the structured β-propeller catalytic-like domain; this linker region contributes to the overall ectodomain architecture and channel complex presentation at the cell surface	RP2DPP10	In catalog
Catalytic domain	**1–796** Region within the large C-terminal ectodomain of human DPP-10 that adopts a β-propeller and α/β-hydrolase fold homologous to the catalytic domain of active prolyl oligopeptidase family members; despite structural conservation, the catalytic triad is degenerate and confers no proteolytic activity	RP3DPP10	In catalog
—	**1–796** Broad epitope coverage spanning multiple extracellular regions of human DPP-10, including the stalk, spacer, and β-propeller ectodomain; suitable as a general-purpose reagent for detection of total DPP-10 protein across a range of tissue and cell contexts	RP-DPP10	In catalog

Applications & Recommended Dilutions

App.	Species	Dilution Range	Notes
WB	Validated- Human Potential-	1:1000	Optimal dilution should be determined per laboratory and lot.

Optimal dilutions should be determined by each laboratory for each application. Triple Point Biologics antibodies include a peptide-neutralized negative control aliquot for specific-signal confirmation.

Storage & Handling

Short-term Storage	+4°C (1–2 weeks)
Long-term Storage	Aliquot and store at -20°C

Shipping Conditions	Shipped in styrofoam cooler on blue ice
Hazard Warning	Product may contain Sodium Azide — POISONOUS AND HAZARDOUS. Handle by trained personnel only.
Shelf Life	12 months from date of receipt under recommended conditions

Target Background

Family & General Biology

Dipeptidyl peptidase 10 (DPP-10, UniProt Q8N608) is a 796-amino acid type II transmembrane glycoprotein belonging to the peptidase S9B (prolyl oligopeptidase) family. Despite close structural homology to catalytically active dipeptidyl peptidases such as DPP4 and DPP6, DPP-10 is enzymatically inactive: critical catalytic triad residues are substituted, abolishing serine protease activity. DPP-10 is therefore classified as a non-enzymatic, regulatory member of the DPP family, functioning exclusively as a modulator of voltage-gated ion channels rather than as a peptide-cleaving enzyme.

Expression & Localisation

DPP-10 expression is predominantly neuronal, with highest transcript levels detected in the brain — including the cerebellum, hippocampus, and cerebral cortex — as well as in the heart and adrenal gland. Lower expression has been reported in lung and skeletal muscle. At the subcellular level, DPP-10 localises to the plasma membrane, where its single transmembrane domain anchors a short N-terminal cytoplasmic tail and a large extracellular ectodomain. Co-localisation with Kv4-family channels at somatodendritic membranes and axon initial segments has been documented in central neurons.

Auxiliary Channel Subunit Function

DPP-10 functions as an auxiliary subunit of Kv4-family (KCND) voltage-gated potassium channels, which underlie the rapidly inactivating, somatodendritic A-type K■ current (I_A). By forming stable complexes with KCND2 (Kv4.2) and KCND3 (Kv4.3), DPP-10 markedly accelerates current inactivation and recovery from inactivation, shifts the voltage dependence of activation and inactivation to more hyperpolarised potentials, and dramatically increases channel surface trafficking. These biophysical effects combine to sharpen the frequency-tuning properties of neurons and regulate the back-propagation of action potentials into dendrites.

Interaction with KChIPs and Ternary Complex Formation

DPP-10 does not act alone; it co-assembles with Kv4 α-subunits and K■ channel-interacting proteins (KChIPs) to form ternary channel complexes. Within these complexes, DPP-10 and KChIPs exert partially overlapping yet distinct modulatory effects on gating kinetics and surface expression. The extracellular stalk and juxtamembrane regions of DPP-10 are implicated in physical contact with the Kv4 α-subunit, while the large C-terminal ectodomain — which adopts a β-propeller fold reminiscent of prolyl oligopeptidase — contributes to complex stability and membrane targeting.

Disease Relevance

Genetic variation in DPP10 has been linked to several neurological and cardiac phenotypes. Rare copy-number variants and single-nucleotide polymorphisms in the DPP10 locus have been associated with autism spectrum disorder, asthma susceptibility, and sudden infant death syndrome (SIDS). Because Kv4.2-containing channels are central regulators of neuronal excitability, disruption of DPP-10 function can alter action potential firing patterns in a manner potentially relevant to epilepsy and cardiac arrhythmia. The protein is also of interest in respiratory biology, given its expression in airway-related tissues and the documented asthma association signals at the DPP10 locus.

Research Utility

Detection of endogenous DPP-10 protein is relevant to studies of ion channel trafficking, neuronal excitability, cardiac electrophysiology, and disease genetics. Because DPP-10 is an obligate membrane protein, antibodies validated for both denaturing (Western blot) and native-context (immunohistochemistry, immunofluorescence) applications are particularly useful for establishing expression patterns across brain regions and for confirming subcellular localisation. Isoform diversity arising from alternative splicing — at least three isoforms differing primarily in N-terminal cytoplasmic sequence — should be considered when interpreting band patterns on Western blot.

Gene & Protein Reference

Gene Symbol	DPP10
HGNC	HGNC:18228
NCBI Gene ID (Human)	57628
NCBI Gene ID (Mouse)	74381
Ensembl	ENSG00000175497
OMIM	608209
UniProt (Human)	Q8N608
UniProt (Mouse)	Q8BYQ6
Protein Family	Peptidase S9B (prolyl oligopeptidase) family; DPP4 subfamily; non-catalytic member
Predicted MW	~88 kDa (796 aa; glycosylated forms shift apparent mass higher)
Observed MW	~90–100 kDa (SDS-PAGE, depending on glycosylation state)
Chromosome	2q14.1
Paralogue	DPP6 (DPPX); DPP4; FAP
Key Substrates	None — catalytically inactive; no dipeptidyl peptidase activity
Activated by	Not applicable (non-enzymatic regulatory protein); channel complex activity modulated by co-assembly with KCND2/KCND3 and KChIP subunits
Inhibited by	Not applicable (no enzymatic activity to inhibit)

About Triple Point Biologics

With over 30 years dedicated to antibody production, Triple Point Biologics is a Canadian company and the premier resource for proteinase and proteinase inhibitor research. Products have been cited in thousands of peer-reviewed publications.

The domain-specific antibody strategy — available in standard, ATK, SPA, and GSK kit formats — delivers predefined epitopes, built-in peptide-neutralized negative controls, and superior specificity for Western blot.

Website: www.triplepointbiologics.com

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Product specifications subject to change. Contact Triple Point Biologics for current product and availability information.