Recombinant Human S100A14 His-tag

Catalog Number: 11801-SA

DESCRIPTION

Source	*E. coli*-derived human S100A14 protein Gly2-His104 with a N-terminal 6-His tag Accession # Q9HCY8.1
N-terminal Sequence Analysis	His
Predicted Molecular Mass	12 kDa

SPECIFICATIONS

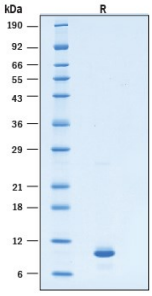
SDS-PAGE	8-10 kDa, under reducing conditions.
Activity	Measured by its binding ability in a functional ELISA. Recombinant Human S100A14 His-tag (Catalog # 11801-SA) binds to Recombinant Human RAGE/AGER Fc Chimera (Catalog # 1145-RG) with an ED_{50} of <10.0 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Tris with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 250 µg/mL in water.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 2 weeks, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

SDS-Page



Recombinant Human S100A14 His-tag Protein SDS-PAGE. 2 µg/lane of Recombinant Human S100A14 His-tag Protein (Catalog # 11801-SA) was resolved with SDS-PAGE under reducing (R) condition and visualized by Coomassie® Blue staining, showing bands at 8-10 kDa.

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BACKGROUND

S100 calcium-binding protein A14 (S100A14) is a small (~11 kDa) intracellular protein belonging to the S100 family of EF-hand proteins, most of which are encoded within the epidermal differentiation complex on chromosome 1q21. S100A14 is predominantly expressed in epithelial tissues, with enriched expression in stratified squamous epithelia such as the esophagus, oral mucosa, and skin. Unlike many S100 family members, S100A14 exhibits atypical calcium-binding properties due to partial divergence within its EF-hand motifs, conferring context-dependent functional behavior (1). S100A14 participates in multiple cellular processes, including regulation of cell proliferation, differentiation, migration, and apoptosis. Its biological functions are highly tissue- and context-specific, with evidence supporting both tumor-suppressive and tumor-promoting roles depending on cancer type and molecular background (1, 2). In epithelial-derived malignancies of the gastrointestinal tract, such as esophageal, gastric, and colorectal cancers, S100A14 is frequently associated with epithelial differentiation, reduced motility, and suppression of invasive behavior (3, 4). In contrast, in certain non-gastrointestinal cancers, elevated S100A14 expression has been linked to enhanced proliferation or metastatic signaling (2, 5). Mechanistically, S100A14 has been shown to modulate key signaling pathways, including p53-dependent transcriptional networks, matrix metalloproteinase regulation, and receptor-associated signaling cascades. S100A14 can influence p53 stability and activity, thereby regulating downstream targets involved in cell cycle control and invasion, such as p21 and MMP2, in a p53-status-dependent manner (1, 6). In colorectal cancer, recent studies further indicate a role for S100A14 in suppressing cancer stemness and immune evasion through inhibition of STAT3-mediated PD-L1 expression, highlighting its relevance to tumor–immune interactions (7). Altered expression of S100A14 has been correlated with clinicopathological features and patient outcomes in multiple cancer types, supporting its potential utility as a prognostic biomarker and mechanistic regulator of epithelial tumor biology (2–5). Recombinant human S100A14 therefore represents a valuable tool for investigating calcium-regulated signaling, epithelial differentiation, p53-associated pathways, and the molecular mechanisms underlying cancer progression and immune modulation.

References:

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