ATAGENIX LABORATORIES

Catalog Number:ATMP00013HU

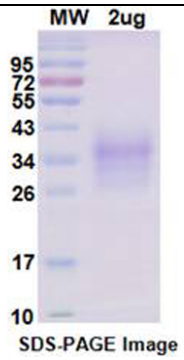
Recombinant Human CD47 protein ,C- His Tag

Product Details

Summary

English name	Recombinant Human CD47 protein ,C- His Tag
Purity	>90% as determined by SDS-PAGE
Endotoxin level	<1.0 EU per μg of the protein as determined by the LAL method.
Construction	A DNA sequence encoding the human CD47(Met1~Glu141) was fused with the C-terminal His Tag
Accession #	Q08722
Host	Mammalian cells
Species	Homo sapiens (Human)
Predicted Molecular Mass	15.32kDa
Formulation	Supplied as solution form in 50 mM Tris-HCl, pH 7.5, 150 mM NaCl or lyophilized from 50 mM Tris-HCl, pH 7.5, 150 mM NaCl.
Shipping	In general, proteins are provided as lyophilized powder/frozen liquid. They are shipped out with dry ice/blue ice unless customers require otherwise.
Stability &Storage	Use a manual defrost freezer and avoid repeated freeze thaw cycles. Store at 2 to 8 °C for one week . Store at -20 to -80 °C for twelve months from the date of receipt.
Reconstitution	Reconstitute in sterile water for a stock solution.A copy of datasheet will be provided with the products, please refer to it for details.

SDS-PAGE image



SDS-PAGE Image

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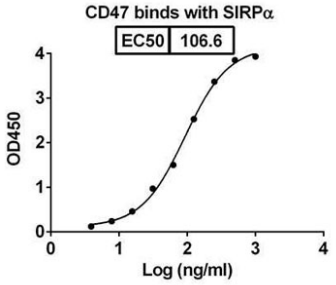
Bioactivity



CD47(ATMP00013HU) bind with SIRPa(ATMP01936HU) measured by functional ELISA assay

Background

Background	Leukocyte surface antigen CD47 is also known as Antigenic surface determinant protein OA3, Integrin-associated protein (IAP) and Protein MER6. CD47 contains 1 Ig-like V-type (immunoglobulin-like) domain. CD47 is very broadly distributed on normal adult tissues. CD47 has a role in both cell adhesion by acting as an adhesion receptor for THBS1 on platelets, and in the modulation of integrins and plays an important role in memory formation and synaptic plasticity in the hippocampus by similarity. CD47 is the receptor for SIRPA, binding to which prevents maturation of immature dendritic cells and inhibits cytokine production by mature dendritic cells. CD47 Interaction with SIRPG mediates cell-cell adhesion, enhances superantigen-dependent T-cell-mediated proliferation and costimulates T-cell activation.
Alternative Names	CD47,MER6,IAP,OA3
References	Ghimire, Li, Chiba, Julovi, Li, Ross, Straub, O'Connell, Rüegg, Pagano, Isenberg, Rogers (2020) CD47 Promotes Age-Associated Deterioration in Angiogenesis, Blood Flow and Glucose Homeostasis Cells 9(7)

Frontier progress

The aged population is currently at its highest level in human history and is expected to increase further in the coming years. In humans, aging is accompanied by impaired angiogenesis, diminished blood flow and altered metabolism, among others. A cellular mechanism that impinges upon these manifestations of aging can be a suitable target for therapeutic intervention. Here we identify cell surface receptor CD47 as a novel age-sensitive driver of vascular and metabolic dysfunction. With the natural aging process, CD47 and its ligand thrombospondin-1 were increased, concurrent with a reduction of self-renewal transcription factors OCT4, SOX2, KLF4 and cMYC (OSKM) in arteries from aged wild-type mice and older human subjects compared to younger controls. These perturbations were prevented in arteries from aged CD47-null mice. Arterial endothelial cells isolated

from aged wild-type mice displayed cellular exhaustion with decreased proliferation, migration and tube formation compared to cells from aged CD47-null mice. CD47 suppressed ex vivo sprouting, in vivo angiogenesis and skeletal muscle blood flow in aged wild-type mice. Treatment of arteries from older humans with a CD47 blocking antibody mitigated the age-related deterioration in angiogenesis. Finally, aged CD47-null mice were resistant to age- and diet-associated weight gain, glucose intolerance and insulin desensitization. These results indicate that the CD47-mediated signaling maladapts during aging to broadly impair endothelial self-renewal, angiogenesis, perfusion and glucose homeostasis. Our findings provide a strong rationale for therapeutically targeting CD47 to minimize these dysfunctions during aging.