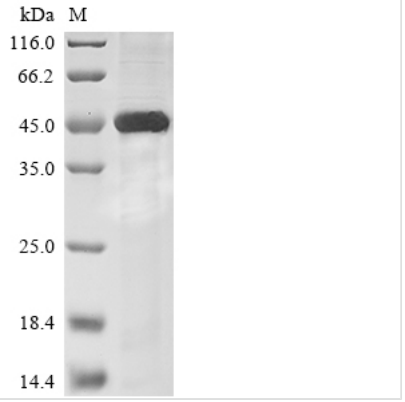
Recombinant Mouse Sialidase-1 (Neu1)

Product Code	CSB-EP015717MO
Abbreviation	Recombinant Mouse Neu1 protein
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.	O35657
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Mus musculus(Mouse)
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	EDDFSLVQPLVTMEQLLWVSGKQIGSVDTFRIPLITATPRGTLLAFAEARKKSA SDEGAKFIAMRRSTDQGSTWSSTAFIVDDGEASDGLNLGAVVNDVDTGIVFLIY TLCAHKVNCQVASTMLVWSKDDGISWSPPRNLSVDIGTEMFAPGPGSGIQKQ REPGKGRLIVCGHGTLERDGVFCLLSDDHGASWHYGTGVSGIPFGQPKHDHD FNPDECQPYELPDGSVIINARNQNNYHCRCRIVLRSYDACDTLRPRDVTFDPE LVDPVVAAGALATSSGIVFFSNPAHPEFRVNLTLRWSFSNGTSWQKERVQVW PGPSGYSSLTALENSTDGKKQPPQLFVLYEKGLNRYTESISMVKISVYGTL
Research Area	Microbiology
Source	E.coli
Target Names	Neu1
Protein Names	Recommended name: Sialidase-1 EC= 3.2.1.18 Alternative name(s): G9 sialidase Lysosomal sialidase N-acetyl-alpha-neuraminidase 1
Expression Region	42-409aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 10xHis-tagged
Mol. Weight	46.3 kDa
Protein Length	Full Length of Mature Protein
Image	



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

Description

The plasmid vector incorporates the mouse Sialidase-1 (Neu1) protein (42-409aa) encoding gene and the N-terminal 10xHis-tag gene, generating the recombinant plasmid, which is then introduced into E.coli cells. Selection of positive E.coli cells is based on their capacity to withstand a particular antibiotic. Subsequently, the E.coli cells containing the recombinant plasmid are cultivated under conditions that facilitate the expression of the mouse Neu1. Following expression, affinity purification is employed to isolate and purify the recombinant mouse Neu1 protein from the cell lysate. Denaturing SDS-PAGE is used to resolve the resulting recombinant protein, enabling an estimation of its purity, exceeding 85%.

Neu1, also known as neuraminidase 1, is an enzyme found in lysosomes, essential for breaking down sialylated glycoconjugates [1]. It's particularly effective against short sugar chains and small protein-sugar complexes [1]. Neu1 shows increased activity when monocytes transform into macrophages, indicating its importance in macrophage function and immune response [2]. It's also involved in regulating insulin signaling [3], managing energy use and stress in heart cells after a heart attack [4], and promoting insulin signaling [5]. Moreover, Neu1 seems to influence immune response, tissue elasticity, and cell growth [5]. It can even alter the signals of Toll-like receptors, impacting the response to certain infections [6]. In some cancers, like melanoma, Neu1 may have a role, although it's not fully clear yet [7]. This enzyme is made in the endoplasmic reticulum, then modified and activated with the help of another protein, protective protein/cathepsin A (PPCA) [8][9][10]. Neu1 also affects microglial activation and contributes to inflammatory processes in diseases like aortic dissection [11][12]. In certain bladder cancers, Neu1 slows down cancer cell growth by interfering with specific protein interactions and signaling pathways [13]. It's also linked to changes in receptors that control the release of fat-related hormones, hinting at a role in regulating fat tissue functions [14].

References:

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Shelf Life

The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself.
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