Aurora Biolabs

SERVICES: Assay Development | High Throughput Screening | Expression & Purification

PRODUCTS: Assay Kits | Kras Mutants | Drug Target Proteins | Cytokines | Tool Enzymes

INNOVATIVE BIOTECH SOLUTIONS FOR DRUG DISCOVERY PROJECTS

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www.aurorabiolabs.com
San Diego, CA 92121

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High Purity Protein for Research

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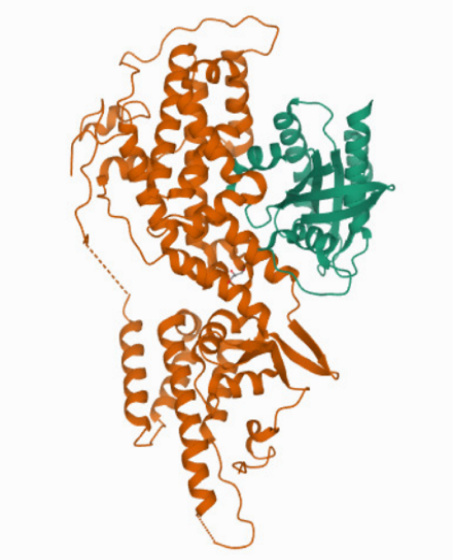
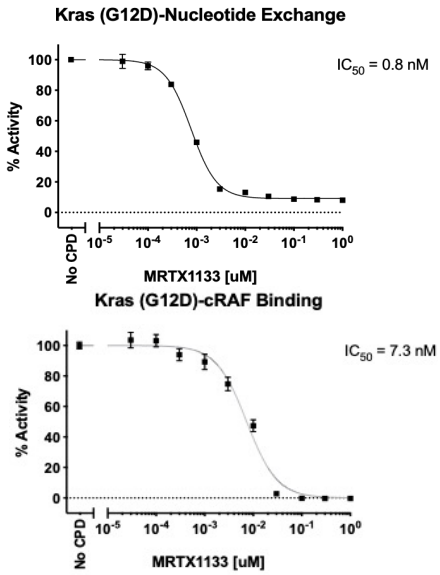
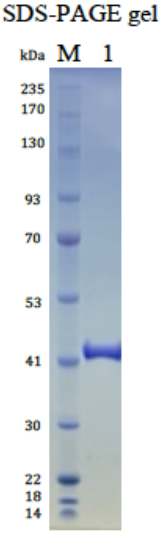






Introducing NEW series of wild-type and mutated Kras family human recombinant proteins and assay services!

The *KRAS* gene plays important roles in cell division, cell differentiation, and apoptosis. We offer an assortment of KRAS recombinant protein, assay kits, and services to advance your research and drug discovery needs.

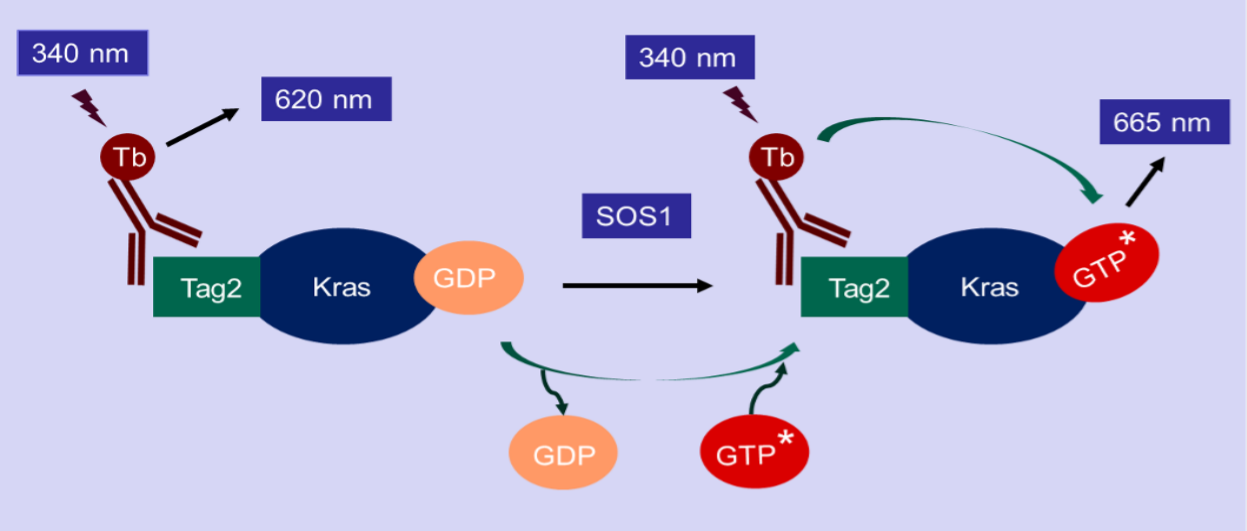
- Kras wild-type and mutants (G12C, G12D, G13D, G12R, G12V) (apo)
- Kras wild-type and mutants (G12C, G12D, G13D, G12R, G12V) + GDP loaded
- Kras wild-type and mutants (G12C, G12D, G13D, G12R, G12V) + GppNHp loaded (for activity binding assay)
- Kras wild-type and mutants (G12C, G12D, G13D, G12R, G12V) TR-FRET based Nucleotide exchange assay kits
- Kras wild-type and mutants (G12C, G12D, G12R, G12V) TR-FRET based Kras -cRAF binding assay
- Kras assay services (Compound screening and profiling)
- Human recombinant SOS1 and cRAF

KRAS Nucleotide exchange assay:

Our Nucleotide exchange assay for our kits/service is a TR-FRET based assay. The assay kit is designed to detect the GTP binding status of Kras in the presence of SOS1, the most-studied guanine nucleotide exchange factor (GEF) of Kras. The Tag2-Kras in this assay kit is recognized by a Terbium-labeled anti-Tag2 antibody (HTRF donor). If Kras binds to a fluorescence-labeled GTP (HTRF acceptor), the donor and the acceptor will be brought in close proximity. Excitation of Terbium (340 nm) generates fluorescence resonance energy transfer (FRET) to the fluorescence-labeled GTP acceptor, which consequently fluoresces at 665 nm (figure below). Thus, GTP binding to Kras can be

quantitively measured by calculation of the fluorescent ratio of 665 nm/620 nm. The inhibitor blocking the nucleotide exchange will reduce the HTRF signal.

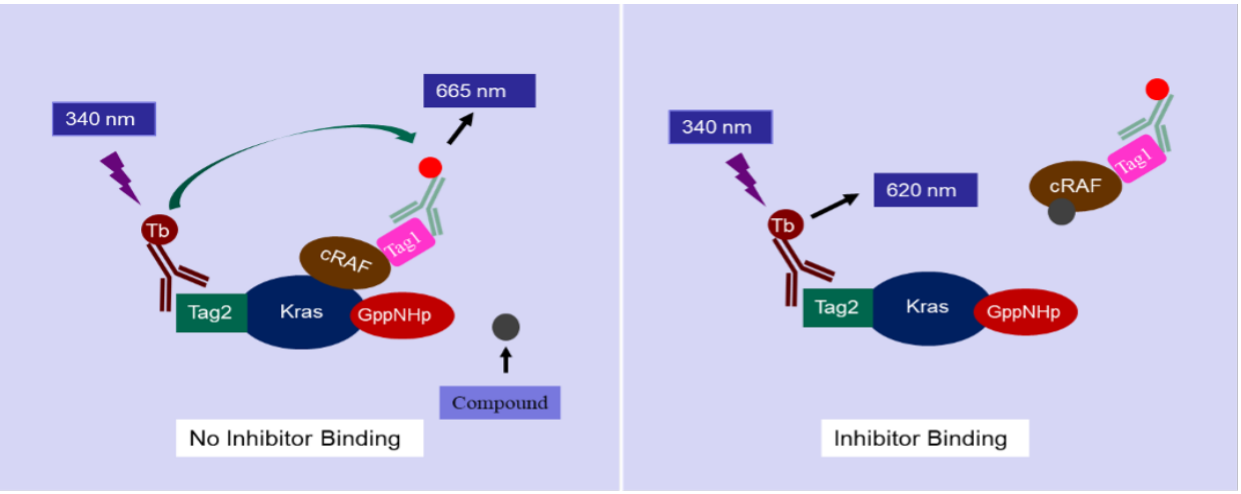
KRAS Nucleotide exchange assay schematic:



Kras-cRAF binding assay:

The Kras-cRAF binding assay is a TR-FRET based assay. In this assay, Kras is loaded with GppNHp, representing the activated Kras. The assay kit is designed to detect binding between Kras and cRAF. The Kras in this assay kit has a Tag2, that can bind to a Terbium-labeled anti-Tag2 antibody (HTRF donor), and cRAF in this assay kit has a Tag1, that can bind to a fluorescence-labeled anti-Tag1 antibody (HTRF acceptor). The binding of Kras with cRAF results in fluorescence resonance energy transfer (FRET) from the HTRF donor to the HTRF acceptor when the donor is activated allowing cRAF binding to be measured.

Kras-cRAF binding assay schematic:



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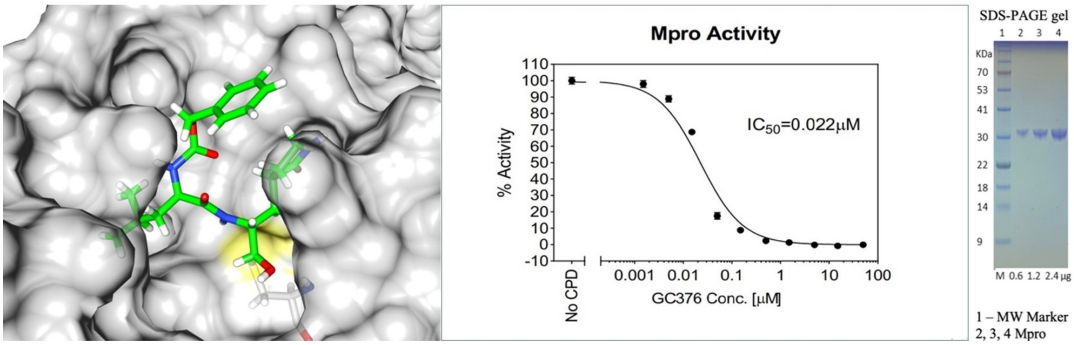


Introducing NEW SARS-CoV-2 recombinant proteins and assay services!

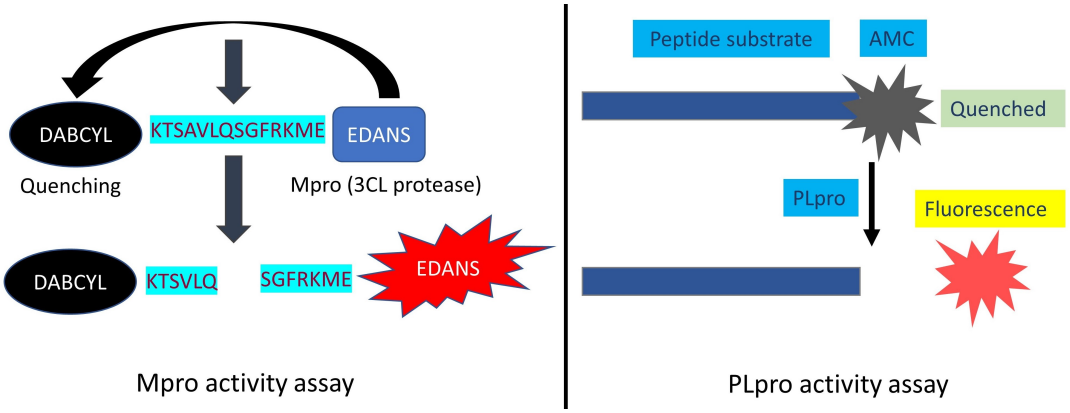
SARS-CoV-2, the viral agent responsible for the COVID-19 pandemic, is composed of an assortment of gene products critical to the viral lifecycle. We offer an assortment of SARS-CoV-2 recombinant proteins, kits, and services to advance your research and drug discovery needs.

- SARS-CoV-2 Main/3CL Protease
- SARS-CoV-2 Mpro Assay Kit
- Recombinant SARS-CoV-2 Papain-like Protease
- SARS-CoV-2 PLpro Assay Kit
- Recombinant SARS-CoV-2 Helicase
- Recombinant SARS-CoV-2 NSP7/NSP8

SARS-CoV-2 Protease assays:

Our protease activity assays for our kits/service are FRET based assays. The assay kits are designed to detect the cleavage of peptide substrates specific for the protease of interest, either Mpro or PLpro, and is designed for inhibitor screening applications. In general, the assay is fast and convenient, and requires just two steps. In the first step, the protease enzyme is preincubated with inhibitor for 30 minutes. The reaction is initiated by adding protease substrate at the second step. Fluorescence intensity is measured with a fluorescent plate reader at the excitation wavelengths of 340-360 nm and emission wavelengths of 460-480 nm.

Mpro and PLpro Protease assay schematic:



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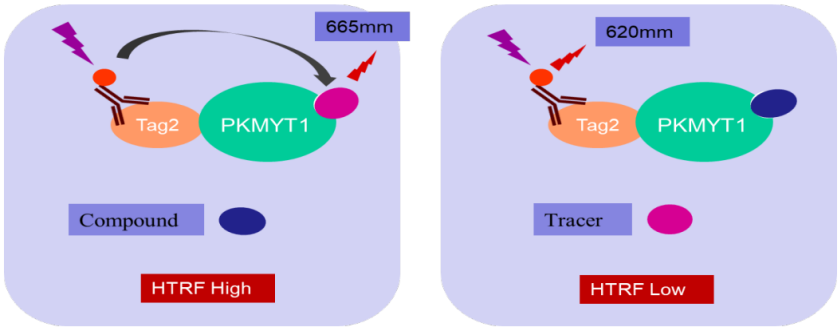
Introducing New Ready Made Assay Kits!!

PKMYT1 Binding Assay Kit

PKMYT1, a membrane-associated tyrosine- and threonine-specific cdc2-inhibitory kinase, belonging to WEE1 kinase family that plays an important role in the regulation of mitosis. Our PKMYT1 binding assay kit is a TR-FRET based assay designed to screen compounds that bind to PKMYT1. Binding of a fluorescence-labeled tracer by PKMYT1 results in fluorescence resonance energy transfer (FRET) between the fluorescence donor bound to PKMYT1 and the fluorescence acceptor on the tracer resulting in a fluorescence emission at 665 mm. Competitive binding of a non-fluorescence-labeled compound will displace the tracer and therefore reduce the receptor signal.

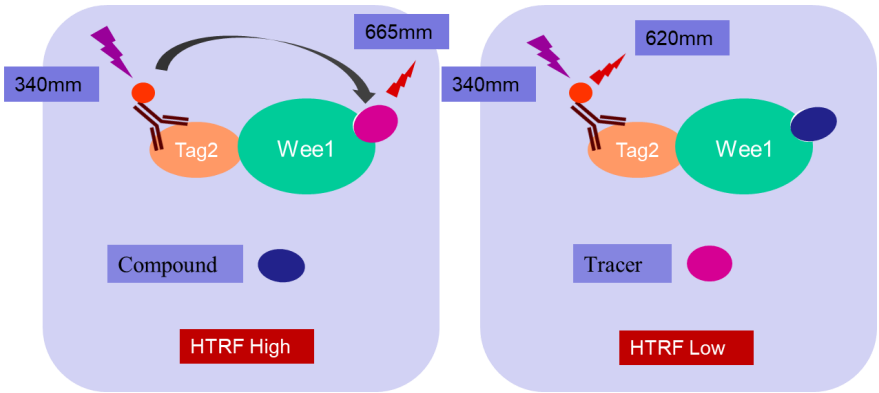
Schematic of PKMYT1 binding assay kit



WEE1 Binding Assay Kits

WEE1, a nuclear kinase, belongs to WEE kinase family that negatively regulates the cell cycle via phosphorylation of CDK1 and has been identified as a novel drug target to treat cancer. Our WEE1 binding assay kit is a TR-FRET based assay designed to screen compounds that bind to WEE1. Binding of a fluorescence-labeled tracer by WEE1 results in fluorescence resonance energy transfer (FRET) between the fluorescence donor bound to WEE1 and the fluorescence acceptor on the tracer resulting in a fluorescence emission at 665 mm. Competitive binding of a non-fluorescence-labeled compound will displace the tracer and therefore reduce the receptor signal.

Schematic of WEE1 binding assay kit



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DNA Polymerase Theta Activity Assay Kit

Catalog Number: 362101

DNA Polymerase Theta

DNA polymerase theta (Pol θ) is involved in an end-joining pathway of DNA double-strand breaks. Overexpression of Pol θ is found in many cancers, including stomach, colon, breast, and lung cancers, and is correlated with poorer patient survival. Because suppression of gene expression of Pol θ results in the sensitivity of cells to ionizing radiation and some DSB-inducing drugs, Pol θ is a validated anti-cancer drug target.

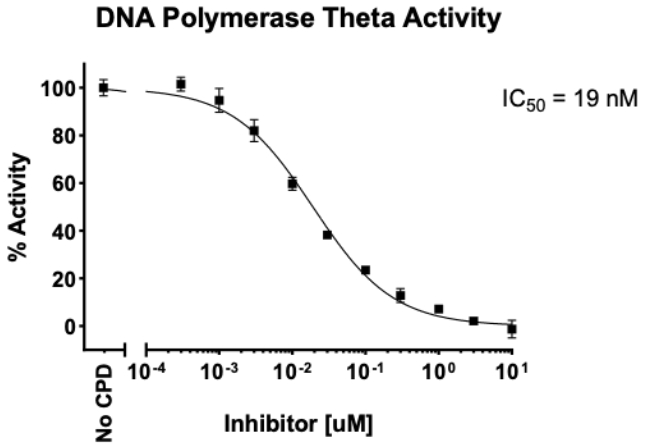
Materials supplied

Catalogue Number	Item	Amount	Storage
362201	2X Assay Buffer	25 mL	-20°C
362204	20 µM DNA template	15 µL	-20°C
4687	10 mM dNTP	5 µL	-20°C
362003	Recombinant DNA Pol θ CTD	5 µL	-80°C
4930	Dye solution	15 µL	-20°C
362202	Stop solution	3 mL	-20°C
	Black low binding 96 well plate	1	RT

DNA Polymerase Theta Activity Assay Kit

The Aurora DNA Polymerase Theta activity assay kit is a homogeneous fluorescence-based assay for screening inhibitors that block DNA polymerase activity of DNA Pol θ.

The assay is fast and convenient and requires just two steps. In the first step, the DNA Pol θ enzyme synthesizes double-stranded DNA using a DNA template in the presence of dNTP. In the second step, a dye that binds to double-stranded DNA is added to the solution resulting in an increase in fluorescence, the intensity of which can be measured with a fluorescent plate reader at the excitation wavelengths of 495 nm and emission wavelengths of 520 nm.



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DNA Polymerase Theta

Catalog Number: 7657385 (Full Length), 7657283 (CTD), 7657643 (Helicase)

Recombinant Human DNA polymerase theta (POLQ) Full Length protein

Human DNA polymerase theta protein is an enzyme encoded by the POLQ gene. It belongs to the family of DNA polymerases, which are enzymes involved in DNA replication and repair processes.

POLQ is a specialized DNA polymerase with unique characteristics. Unlike other polymerases involved in DNA replication, POLQ is primarily associated with the repair of DNA double-strand breaks (DSBs). DSBs are severe types of DNA damage that can lead to genomic instability and are associated with cancer development.

Recombinant Human DNA polymerase theta (POLQ) - C terminal Domain

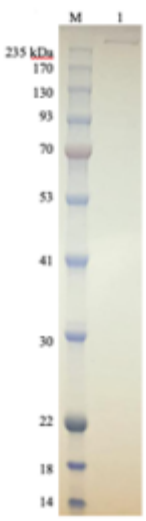
The Pol Theta C-terminal domain refers to a specific region found in the DNA polymerase theta enzyme (Pol θ). Pol θ is a specialized DNA polymerase that plays a role in DNA repair processes, particularly in the repair of double-stranded DNA breaks.

The C-terminal domain of Pol θ is located at the end of the enzyme's protein chain and is involved in various functions related to DNA repair. It contains specific motifs and regions that interact with other proteins and DNA molecules to facilitate repair processes.

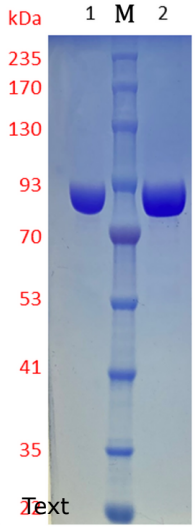
Recombinant Human DNA polymerase theta (POLQ) N-terminal Helicase Domain

The Helicase Domain, is a functional domain within the POLQ enzyme that possesses helicase activity. Helicases are enzymes that play a crucial role in DNA replication and repair processes by unwinding double-stranded DNA.

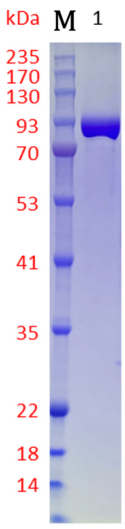
The POLQ enzyme, with its N-terminal helicase domain, is involved in DNA repair pathways, particularly in repairing double-strand breaks (DSBs) in the DNA molecule. DSBs are severe DNA lesions that can occur due to various factors such as exposure to radiation or chemical agents. POLQ helps in the repair of DSBs through an alternative, error-prone DNA repair mechanism called alternative end-joining.



M – MW Marker
1–POLQ-FL



M – MW Marker
1, 2–POLQ-CTD



M – MW Marker
1–POLQ- NTD Helicase Domain

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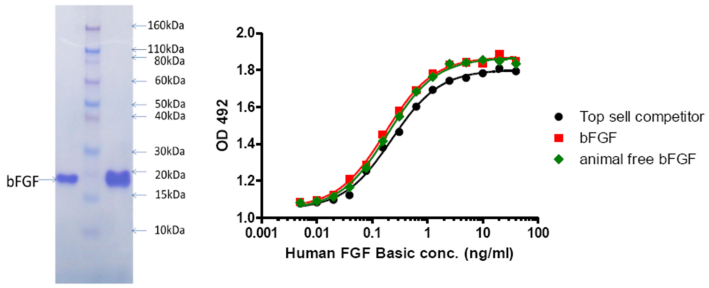
New Products:

Introducing New Growth Factors!!

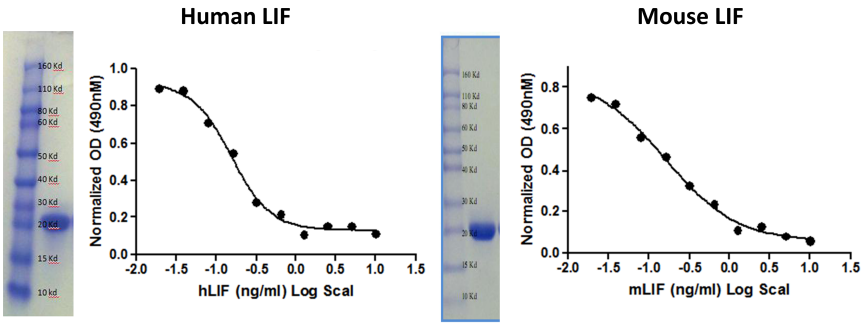
Recombinant human Fibroblast Growth Factor-basic (bFGF) (AA 1-155), also called as FGF-2 or HBGF-2, is a heparin-binding member of the FGF superfamily of molecules. It is involved in a number of biological processes including embryonic development, differentiation, survival, regeneration and migration and is critical for growing undifferentiated embryonic stem cells.

- Recombinant human Fibroblast Growth Factor-basic (bFGF) (AA 1-155)



Leukemia inhibitory factor promotes long-term maintenance of embryonic stem cells by suppressing spontaneous differentiation. hLIF/mLIF are expressed in E. coli and manufactured with an animal-free SOP. Our LIF protein are 98% pure and demonstrate excellent bioactivity.

- Recombinant Human Leukemia inhibitory factor
- Recombinant Mouse Leukemia inhibitory factor



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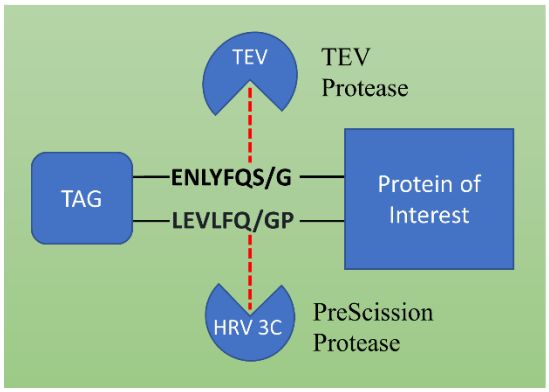
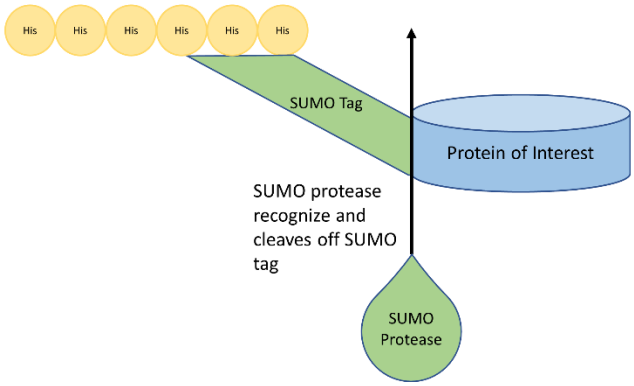
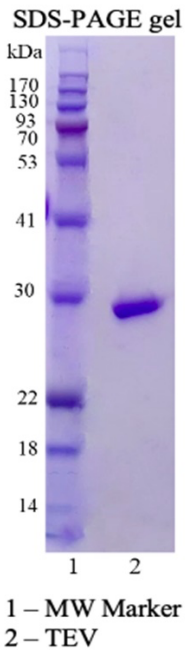


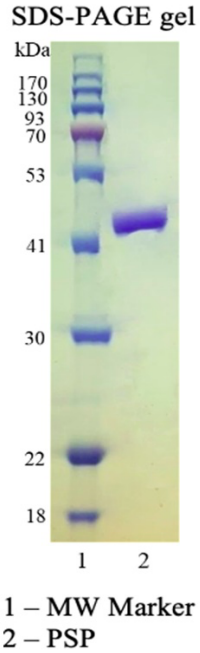


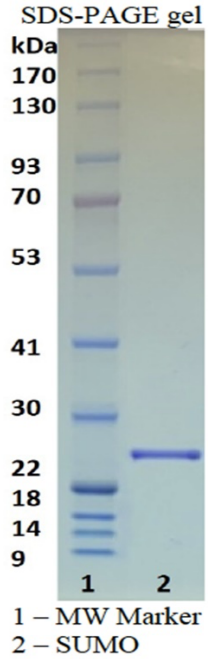
New Products:
Introducing New Tag Removal Proteases!!

Affinity tags are highly effective tools used for the expression and purification of recombinant proteins. However, these tags are not meant to be permanent fixtures on their respective recombinant proteins. Therefore, removal of an affinity tag is essential for further structural and functional studies of a specific protein.

- PreScission Protease (HRV 3C Protease) (Ready to use)
- Recombinant SUMO Protease (ULP1) (Ready to use)
- TEV Protease (Ready to use)







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Recombinant Human Malic Enzymes

Catalog Number: 180001(ME1), 180002 (ME2), 180003 (ME3)

Human Malic Enzyme 1, Human Malic Enzyme 2, and Human Malic Enzyme 3 are different isoforms of the malic enzyme found in humans. Malic enzymes are enzymes that catalyze the oxidative decarboxylation of malate to pyruvate and carbon dioxide. These enzymes play important roles in various biochemical pathways, including fatty acid biosynthesis, the citric acid cycle, and the metabolism of carbohydrates.

Recombinant Human Malic Enzyme 1 (ME1)

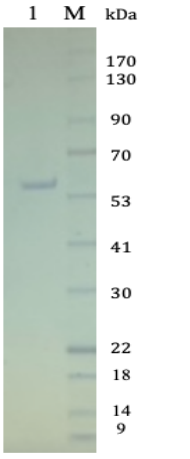
Human ME1 is a cytosolic, NADP-dependent malic enzyme that generates NADPH for fatty acid biosynthesis. The activity of this enzyme, the reversible oxidative decarboxylation of malate, links the glycolytic and citric acid cycles. The regulation of expression for this gene is complex. Increased expression can result from elevated levels of thyroid hormones or by higher proportions of carbohydrates in the diet.

Recombinant Human Malic Enzyme 2 (ME2)

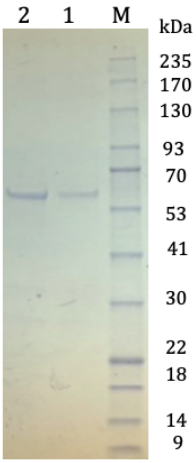
Mitochondrial NAD-dependent malic enzyme (ME2) is a cytosolic enzyme that is involved in the regulation of fatty acid biosynthesis and the production of NADPH. It catalyzes the conversion of malate to pyruvate, generating carbon dioxide and NADPH in the process. It is important for providing reducing power for various biosynthetic reactions.

Recombinant Human Malic Enzyme 3 (ME3)

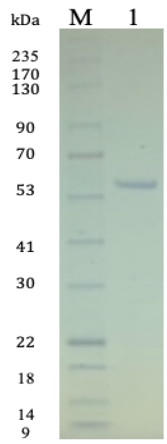
ME3 is another isoform of malic enzyme that is found in various tissues in the human body. This gene encodes a mitochondrial NADP(+)-dependent isoform. Multiple alternatively spliced transcript variants have been found for this gene, but the biological validity of some variants has not been determined. Its exact biochemical significance may vary depending on the tissue or cell type in which it is expressed.



1 – ME1
M – MW Marker



M – MW Marker
1, 2 – ME2



M – MW Marker
1, 2 – ME3

These different isoforms of malic enzyme play essential roles in various metabolic pathways, contributing to energy production, fatty acid biosynthesis, and the regulation of cellular redox balance. They are an important part of the complex network of enzymes and pathways that regulate the metabolism of cells in the human body.

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Aurora Biolabs High-Quality 145,000 Compound Library

Library	Plate#	Master Plate Storage Concentration (mM)	Compound number
Chembridge	500	10	40000
Maybridge	44	10	14080
LifeChemicals	88	10	28160
Enamine 1	32	10	10240
Enamine 2	63	10	20160
NANOSYN	90	5	31365
Selleckchem	6	10	1585

Aurora Biolabs
High Purity Protein for Research

Aurora Biolabs LLC is located at High Tech Park, San Diego, California, USA. Our mission is to manufacture the highest quality protein products, develop accurate assays, and provide first-class service for life science discoveries.

High purity, biological activity, stability, and consistency is the standard precedent for all our products. We aspire to be the most trusted source for clean, reliable, and consistent research data with our top-quality materials.

Backed by an experienced team of scientists and state-of-the-art manufacturing facilities, we know how to provide quality services to achieve maximum client satisfaction. As a direct producer, we will not only ensure the best product quality but also a competitive price for our clients.

We specialize in delivering the highest quality protein products, developing precise and reliable assays, and providing first-class services for life science discovery pharmaceutical companies and scientist academic labs and institutions. All of our products are ISO 17025 certified and manufactured in San Diego, CA, USA.

Our catalog and services are listed as below:

Protein Synthesis Capacity:	Micrograms to Milligram, 50aa to 1000aa
Protein Purity:	>95%, >98%, >99%
Protein Formulation:	Animal-Free, Lyophilized, Carrier-Free, Ready-to-Use
Protein/Cytokine Endotoxicity:	<0.01 ng/ug
Bioactivity:	ED50= 0.1-1.0 ng/ml
Catalog Cytokines/Growth Factors:	bFGF, aFGF, VEGF, etc.
Catalog Recombinant Proteins:	Human Leukemia Inhibitory Factor (LIF), Mouse LIF, Human Sonic Hedgehog (SHH), Malic enzyme 1 (ME1), ME2, ME3, etc.
Catalog Drug Target Proteins:	Kras WT, Kras mutations (G12C, G12D, G13D, G12R, G12V), with GDP or GppNHp loaded, SOS1, cRAF, CDKs, PKM2, EIF4E, MNK2, Bcl2, DNA Polymerase Theta (POLQ), PKMYT1, BirA, Sortase A, etc.
Catalog Tag removal proteases:	TEV, SUMO Protease (Ulp1), PreScission Protease (HRV 3C), YopH
Services:	Protein Expression and Purification, Protein and Antibody Conjugation, drug discovery assay design, develop and service, such as binding assay, nucleotide exchange assay, kinase activity assay, thermal shift assay, Cell Proliferation Assay, Cell Death Assay, ELISA assay, Endotoxin Assay by LAL Method, etc.

Our Products are delivered by FedEx, UPS under refrigerated conditions along with dry ice, ensuring maximum quality and optimal use. Priority, you could receive them through overnight shipping or international priority shipping. Our location is in San Diego, CA, 92121 and we also provide a free local pickup option.

Please let us know if you need our pricelist for custom cytokines, growth factors, recombinant proteins, assay services or assay development services.