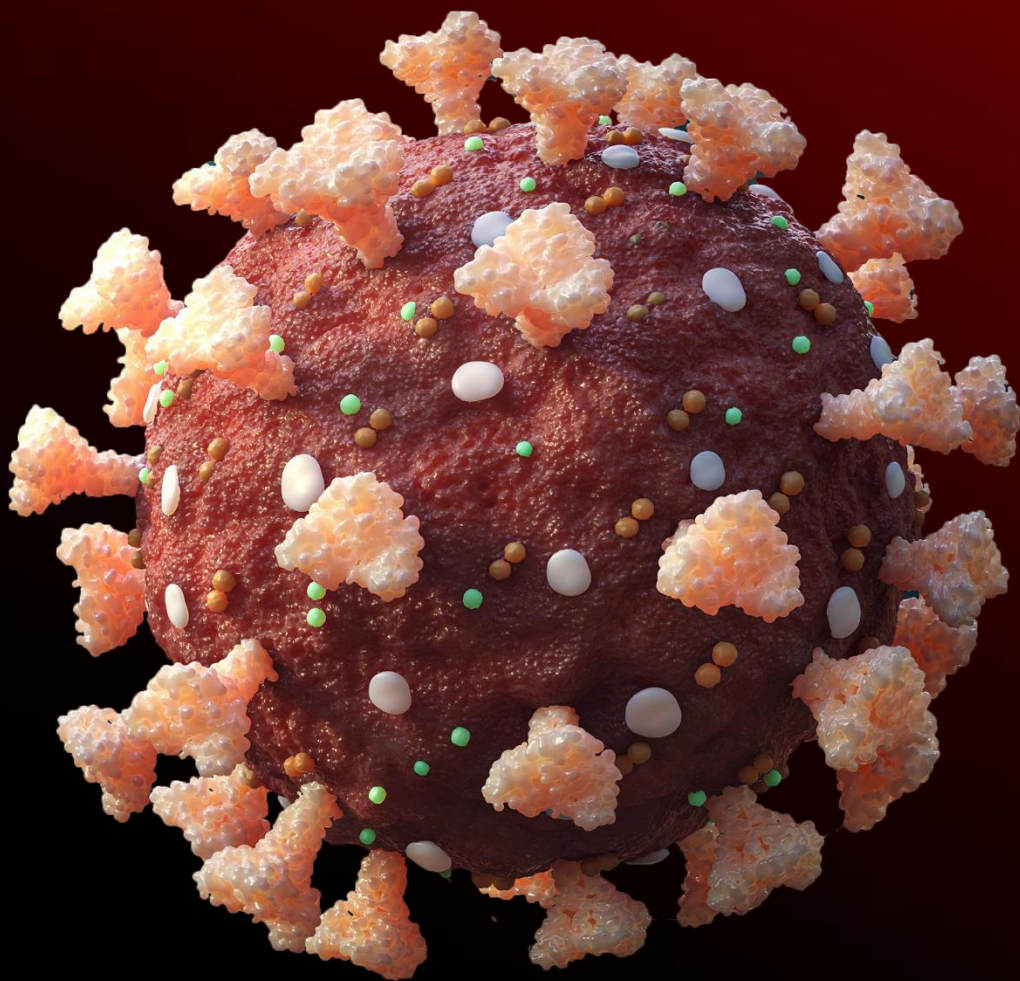




Creative Biolabs®

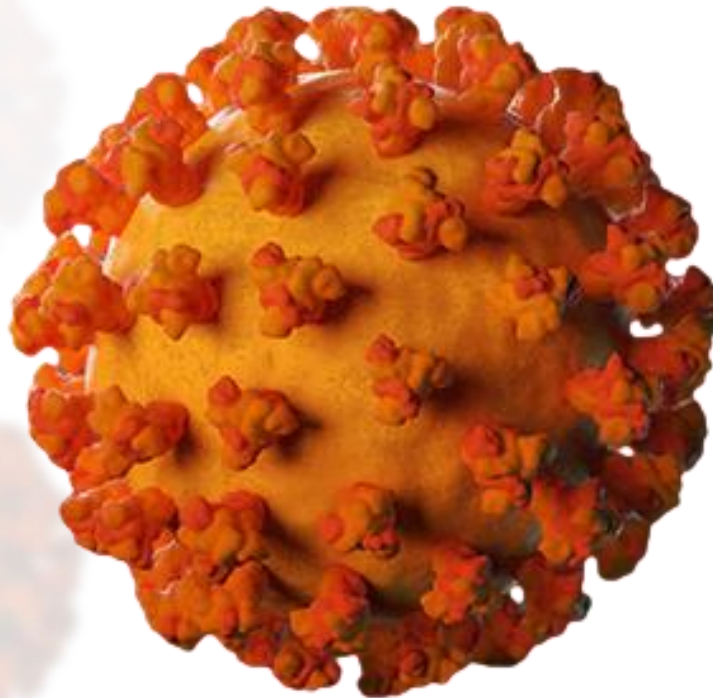
Products for SARS-CoV-2 Omicron (B.1.1.529) Variant

Keep a close eye on the development of the epidemic

A novel method, a better outcome

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SARS-CoV-2 Omicron (B.1.1.529) Variant Introduction



The pandemic caused by SARS-CoV-2 is a public health emergency of international concern. Omicron, a variant of SARS-CoV-2, has an unusually large number of mutations, several of which are novel and a majority of which affect the spike protein targeted by most COVID-19 vaccines.

Creative Biolabs has been keeping a close eye on the development of the epidemic and accelerating the development of SARS-COV-2 related products.

Products for SARS-CoV-2 Omicron (B.1.1.529) Variant



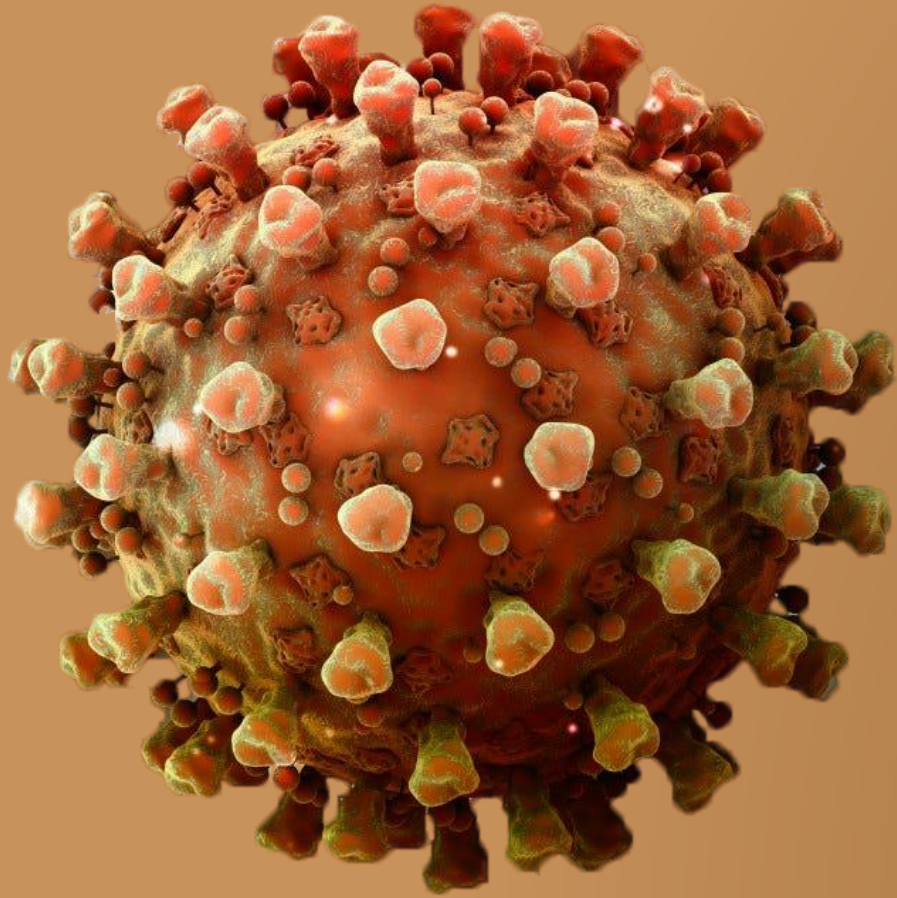
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Protein Products

Cat#	Product Name
MPX4699K	Magic™ Membrane Protein SARS-CoV-2 S Mutation (B.1.1.529 Omicron) (Surface glycoprotein) Full Length
MPX4700K	Magic™ Membrane Protein SARS-CoV-2 S Mutation (B.1.1.529 Omicron) (Surface glycoprotein), Binding Domain
MPX4701K	Magic™ Membrane Protein SARS-CoV-2 S Mutation (B.1.1.529 Omicron) (Surface glycoprotein), S1 Subunit
MPX4702K	Magic™ Membrane Protein SARS-CoV-2 S1 Mutation (Omicron, B.1.1.529) (Surface glycoprotein)
MPX4703K	Magic™ Membrane Protein SARS-CoV-2 RBD Mutation (Omicron, B.1.1.529) (Surface glycoprotein)
MPX4704K	Magic™ Membrane Protein SARS-CoV-2 RBD-HRP Mutation (Omicron, B.1.1.529) (Surface glycoprotein)
MPX4705K	Magic™ Membrane Protein SARS-CoV-2 N Mutation (Omicron, B.1.1.529) (Nucleocapsid phosphoprotein)

VLP Products

Cat#	Product Name
VLP-075YF	SARS-Related Coronavirus 2 Omicron Variant (B.1.1.529) Virus-like Particles (SARS-CoV-2 Omicron Variant VLPs)-Sf9
VLP-076YF	SARS-Related Coronavirus 2 Omicron Variant (B.1.1.529) Virus-like Particles (SARS-CoV-2 Omicron Variant VLPs)-293



SARS-COV-2 RELATED PRODUCTS

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SARS-CoV-2 Recombinant Proteins



CAT#	Product Name	Mutation
MPX0352K	Magic™ Membrane Protein SARS2 N Mutation (R203K, G204R) (Nucleocapsid Phosphoprotein) Expressed in <i>E. coli</i> for Antibody Discovery, Partial (2-419aa)	R203K, G204R
MPX0368K	Magic™ Membrane Protein SARS2 E (Envelope Protein) Expressed in Cell-Free Expression System, Full Length	N/A
MPX0369K	Magic™ Membrane Protein SARS2 N (Nucleocapsid Phosphoprotein) Expressed in Cell-Free Expression System, Full Length	N/A
MPX0370K	Magic™ Membrane Protein SARS2 M (Membrane Glycoprotein) Expressed in Cell-Free Expression System, Full Length	N/A
MPX0371K	Magic™ Membrane Protein SARS2 S (Surface Glycoprotein) Expressed in Cell-Free Expression System, Full Length	N/A
MPC2294K	Magic™ Membrane Protein SARS2 S Mutation (D614G) (Surface Glycoprotein) Full Length	D614G
MPC2295K	Magic™ Membrane Protein SARS2 S Mutation (N501Y) (Surface Glycoprotein) Full Length	N501Y
MPC2296K	Magic™ Membrane Protein SARS2 S Mutation (K417N, E484K, N501Y) (Surface Glycoprotein) Full Length	K417N, E484K, N501Y
MPC2297K	Magic™ Membrane Protein SARS2 S Mutation (K417N, E484K, N501Y, D614G) (Surface Glycoprotein) Full Length	K417N, E484K, N501Y, D614G
MPC2299K	Magic™ Membrane Protein SARS2 S Mutation (S13I, W152C, L452R, D614G) (Surface Glycoprotein) Full Length	S13I, W152C, L452R, D614G

[DISCOVER MORE SARS-COV-2 PRODUCTS](#)

SARS-CoV-2 Reporter Virus Particles



CAT#	Product Name	Mutation
MPX1990K	Magic™ Membrane Protein SARS2 S Protein (Surface Glycoprotein) Reporter Virus Particles	N/A
MPX1991K	Magic™ Membrane Protein SARS2 S Mutation (D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	D614G
MPX1992K	Magic™ Membrane Protein SARS2 S Mutation (L452R, E484Q, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	L452R, E484Q, D614G
MPX1993K	Magic™ Membrane Protein SARS2 S Mutation (G142D, E154K, L452R, E484Q, P681R, Q1071H, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	G142D, E154K, L452R, E484Q, P681R, Q1071H, D614G
MPX1994K	Magic™ Membrane Protein SARS2 S Mutation (T19R, G142D, del156/157, R158G, L452R, T478K, P681R, D950N, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	T19R, G142D, del156/157, R158G, L452R, T478K, P681R, D950N, D614G
MPX1995K	Magic™ Membrane Protein SARS2 S Mutation (T19R, G142D, del156-157, R158G, K417N, L452R, T478K, P681R, D950N, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	T19R, G142D, del156-157, R158G, K417N, L452R, T478K, P681R, D950N, D614G
MPX1996K	Magic™ Membrane Protein SARS2 S Mutation (G75V, T76I, R246N, del247-253, L452Q, F490S, T859N, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	G75V, T76I, R246N, del247-253, L452Q, F490S, T859N, D614G

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SARS-CoV-2 Reporter Virus Particles



CAT#	Product Name	Mutation
MPX1997K	Magic™ Membrane Protein SARS2 S Mutation (E484K, V1176F, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	E484K, V1176F, D614G
MPX1998K	Magic™ Membrane Protein SARS2 S Mutation (T95I, ΔY144, E484K, P681H, D796H, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	T95I, ΔY144, E484K, P681H, D796H, D614G
MPX1999K	Magic™ Membrane Protein SARS2 S Mutation (ΔY145-H146, E484K, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	ΔY145-H146, E484K, D614G
MPX2000K	Magic™ Membrane Protein SARS2 S Mutation (ΔH69/V70, ΔY144, N501Y, A570D, P681H, T716I, S982A, D1118H, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	ΔH69/V70, ΔY144, N501Y, A570D, P681H, T716I, S982A, D1118H, D614G
MPX2001K	Magic™ Membrane Protein SARS2 S Mutation (ΔH69/V70, ΔY144, E484K, N501Y, A570D, P681H, T716I, S982A, D1118H, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	ΔH69/V70, ΔY144, E484K, N501Y, A570D, P681H, T716I, S982A, D1118H, D614G
MPX2002K	Magic™ Membrane Protein SARS2 S Mutation (L18F, D80A, D215G, ΔL242/A243/L244, R246I, K417N, N501Y, E484K, A701V, D614G) Protein (Surface Glycoprotein) Reporter Virus Particles	L18F, D80A, D215G, ΔL242/A243/L244, R246I, K417N, N501Y, E484K, A701V, D614G

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OUR SERVICES

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CREATIVE BIOLABS INC.

- **Membrane Protein Production**

Detergent | Liposome | Nanodisc | SMALPs | VLPs

Full length | ECD | Partial region

Cell-based system | Cell-free system

GPCR | Ion channels | Transporters | Immune checkpoint inhibitors | IO targets | CAR-T targets | CD antigens, *etc.*

- **Membrane Protein Antibody Discovery**

Membrane antigen preparation | Antibody discovery | Immunization | Phage library

- **Membrane Protein Drug Screening**

- **Membrane Protein Stable Cell Line**

- **Antibody Specificity Profiling and Off-Target Identification Using Membrane Proteome Array Technology**

- **Virus-Like Particles**

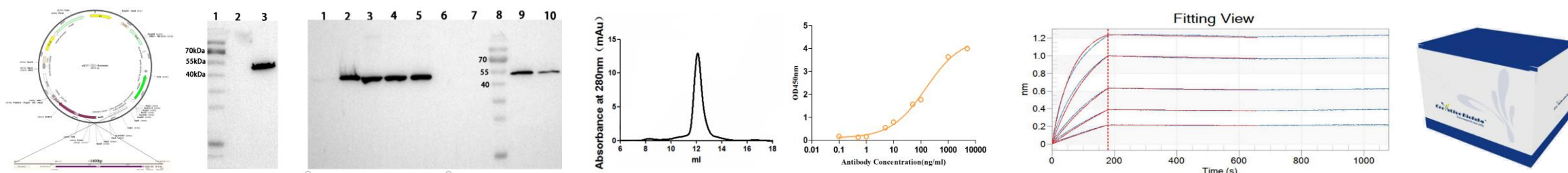
- **Liposome**

- **Cell-Free Kit**

E. coli | Plant | Yeast | Human | Insect | Wheat germ | PURE | Rabbit reticulocyte



Membrane Protein Expression and Purification Service



Phase I: Expression Construct Generation

- Generate target protein expression construct for specific expression platform (*E. coli*, yeast, insect cells, mammalian cells, and cell-free expression systems)
- Construct design and gene synthesis for specific expression system (codon optimization, tag choice, mutation, truncation, etc.)
- Expression vector optimization (if needed)
- Sub-cloning into expression vectors

Phase II: Target Protein Pilot Expression and Purification

- Protein expression screening
- Pilot expression and purification
- Quality control (SDS-PAGE, western blot, ELISA, HPLC, SEC, LC-MS, etc.)
- Delivery of target membrane protein in various conditions (detergent, liposome, nanodisc, etc.)

Phase III: Target Protein Scale Up Expression and Purification (optional)

- Scale up expression and purification
- Quality control (SDS-PAGE, western blot, ELISA, HPLC, LC-MS, etc.)
- Delivery of target membrane protein in various conditions (detergent, liposome, nanodisc, etc.)

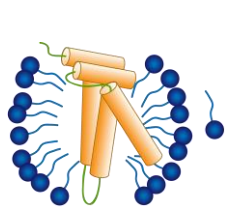
Phase IV: Other Requirements (optional)

- Endotoxin removal
- Protein modification and bio-conjugation
- Functional assay

Phase V: Project Delivery

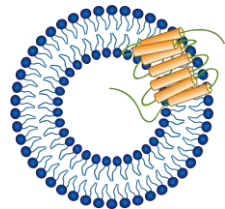
- Project report delivery
- Product delivery

We Offer Different Membrane Proteins Forms



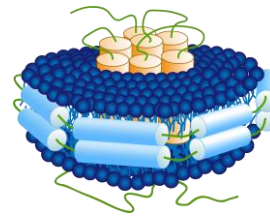
Detergent form

- X-ray protein crystallization
- Solution-state NMR
- Enzyme kinetics
- Protein engineering and mutagenesis studies
- Drug screening
- Drug target discovery
- Diagnostic application



Liposome form

- Electron microscopy
- Solid-state NMR
- Transport assays
- Therapeutic application
- Drug screening
- Protein-protein interaction experiment
- Small molecule or drug target discovery

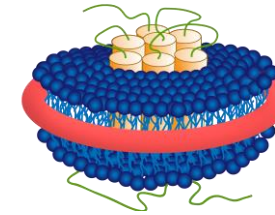


Nanodisc form

- Immunization & antibody selection
- Studies of protein-protein/protein-lipid/protein-ligand/protein-additive interaction
- Membrane protein delivery
- Studies of membrane protein conformation dynamics
- Discovery of small-molecule drugs

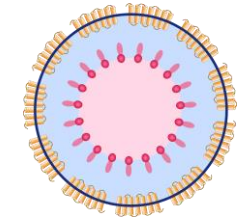
Suitable formats for various techniques, including:

- Binding assays (SPR, BLItz, etc.)
- Solution-state NMR
- Cryo-EM
- Single-molecule characterization (SMFS, TIRFM, etc.)



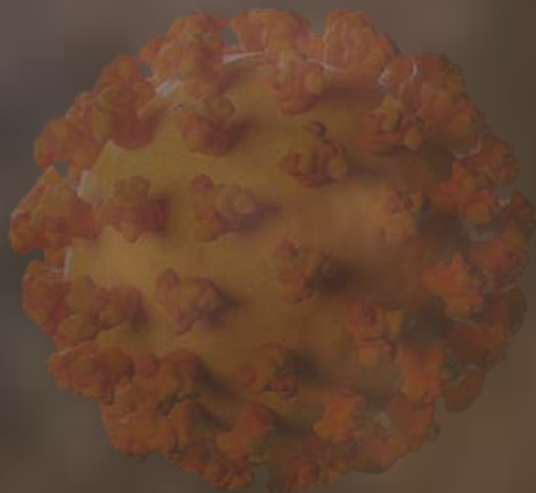
SMALP/Polymer form

- Protein structure with Cryo-EM
- Protein-lipid interaction

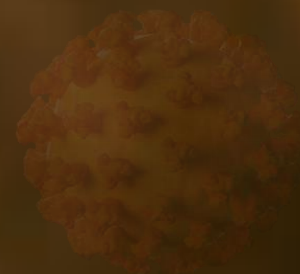


Virus-like particle form

- Immunization for antibody production
- Phage and yeast display for antibody discovery
- Hybridoma screening for antibody discovery
- Antibody characterization
- Membrane protein binding assays
- Membrane protein functional assays



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