

SARS-COV-2 研究における タンパク質、 抗体製品

biotechne®

A 3D molecular model of SARS-CoV-2 spike proteins and antibodies. The spike proteins are shown in blue and pink, with some in red. They are attached to a dark blue, textured surface representing the viral envelope. The background is dark blue.

SARS-CoV-2研究におけるタンパク質

重症急性呼吸器症候群コロナウイルス2型（SARS-CoV-2）の出現とCOVID-19の世界的流行により、このウイルスの病原性の解明が急務となっています。SARS-CoV-2のSpikeタンパク質は、ウイルスの付着とウイルスと宿主細胞膜の融合を制御する重要な因子であるため、治療研究およびワクチン開発の主要な標的となっています。この研究を更に進めるため、Bio-Techneは、SARS-CoV-2 Spikeタンパク質受容体結合ドメイン（RBD）、フルエクトドメインSARS-CoV-2 Spikeタンパク質、Spike S1およびS2サブユニットタンパク質、アルファ、ベータ、ガンマ、デルタ、オミクロンスパイク変異体、組み換えヒトACE-2を含むR&D Systems™バイオアクティブ組み換えSARS-CoV-2 Spikeタンパク質各種を提供しています。また、COVID-19のさらなる治療標的として期待されているSARS-CoV-2パピリン様プロテアーゼ、3CLプロテアーゼの提供も開始しました。

[すべてのSARS-COV-2 タンパク質を見る |](https://rndsystems.com/products/proteins-coronavirus-research)

rndsystems.com/products/proteins-coronavirus-research

SARS-COV-2研究においてR&D SYSTEMS製品を使用することの利点

全て自社製造

R&D Systems®のコロナウイルス関連タンパク質はすべて、経験豊富な社内の研究者によって製造・精製されており、その品質には自信があります。

生物活性試験

各タンパク質の生物活性は、SARS-CoV-2 Spikeタンパク質のACE-2への高親和性結合アッセイ、コロナウイルスのプロテアーゼの酵素レポーターアッセイなど、適切なシステムで試験されます。

ロット間の一貫性試験

製造条件を一定に保ち、新ロットと旧ロットを並べて試験することで、新ロットの生理活性、純度、エンドトキシンレベルが旧ロットと同等であることを保証しています。

他にも各種の分析データあり

サイズ排除クロマトグラフィー（SEC）、質量分析、キャピラリー等電点収束（cIEF）、示差走査蛍光分析（DSF）、動的光散乱（DLS）、表面プラズモン共鳴（SPR）は、特定のタンパク質が正しいサイズまたは構造で、正しい結合特性を示しているという裏付けを得るために行われる試験です。

様々な発現系、タグ、ラベルをご用意

発現系は、昆虫細胞、CHO細胞、HEK293細胞などです。また、Hisタグ、Fcタグ、アミノピオチン化タンパク質、Aviタグピオチン化タンパク質をご用意しています。

スケールアップも可能

R&D Systems®は、アッセイ開発、製造、治療の品質管理試験に必要な要求を満たすために、スケールアップを可能にする収率の高い生産手順を開発しました。

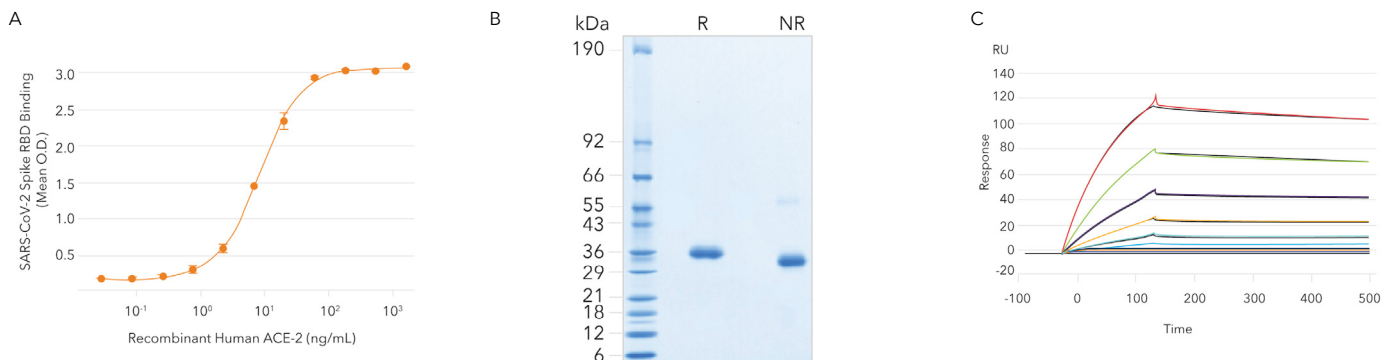
カスタムも柔軟に対応可能

ゼロからタンパク質を開発する場合でも、カタログからカスタマイズする場合でも、当社の経験豊富なチームがお客様の実験ニーズに合ったタンパク質をお作りします。

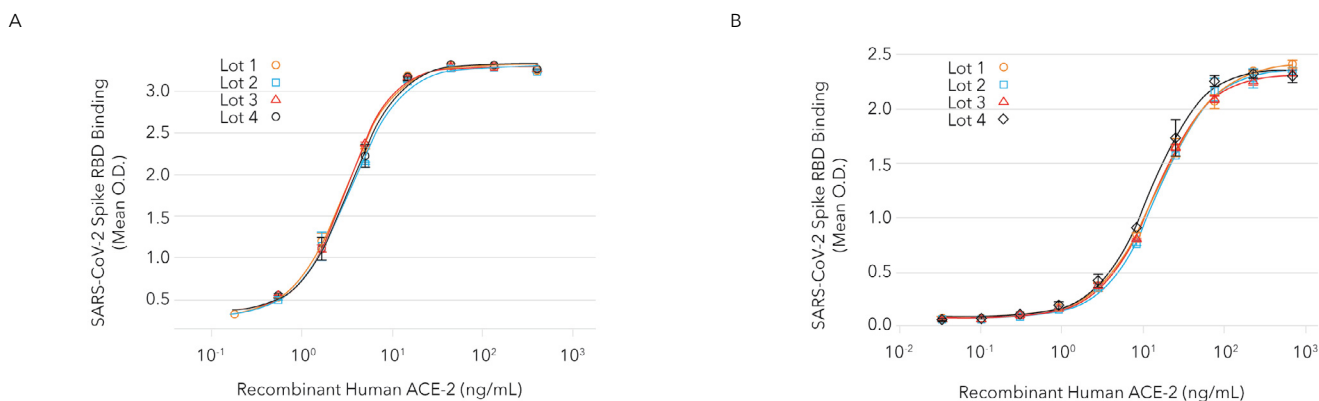
SARS-CoV-2研究用タンパク質の現在の供給状況に不安があまりかもしれませんが、弊社では研究を継続するために必要なタンパク質を提供することができますので、弊社にお任せください。弊社は、あらゆるタンパク質の生産をスケールアップする専門知識と能力を持っており、弊社製品は、広範な生物活性および分析試験データに裏打ちされ、細心の注意を払って開発されています。

R&D SYSTEMSのSARS-COV-2 スパイクタンパク質における生物活性試験

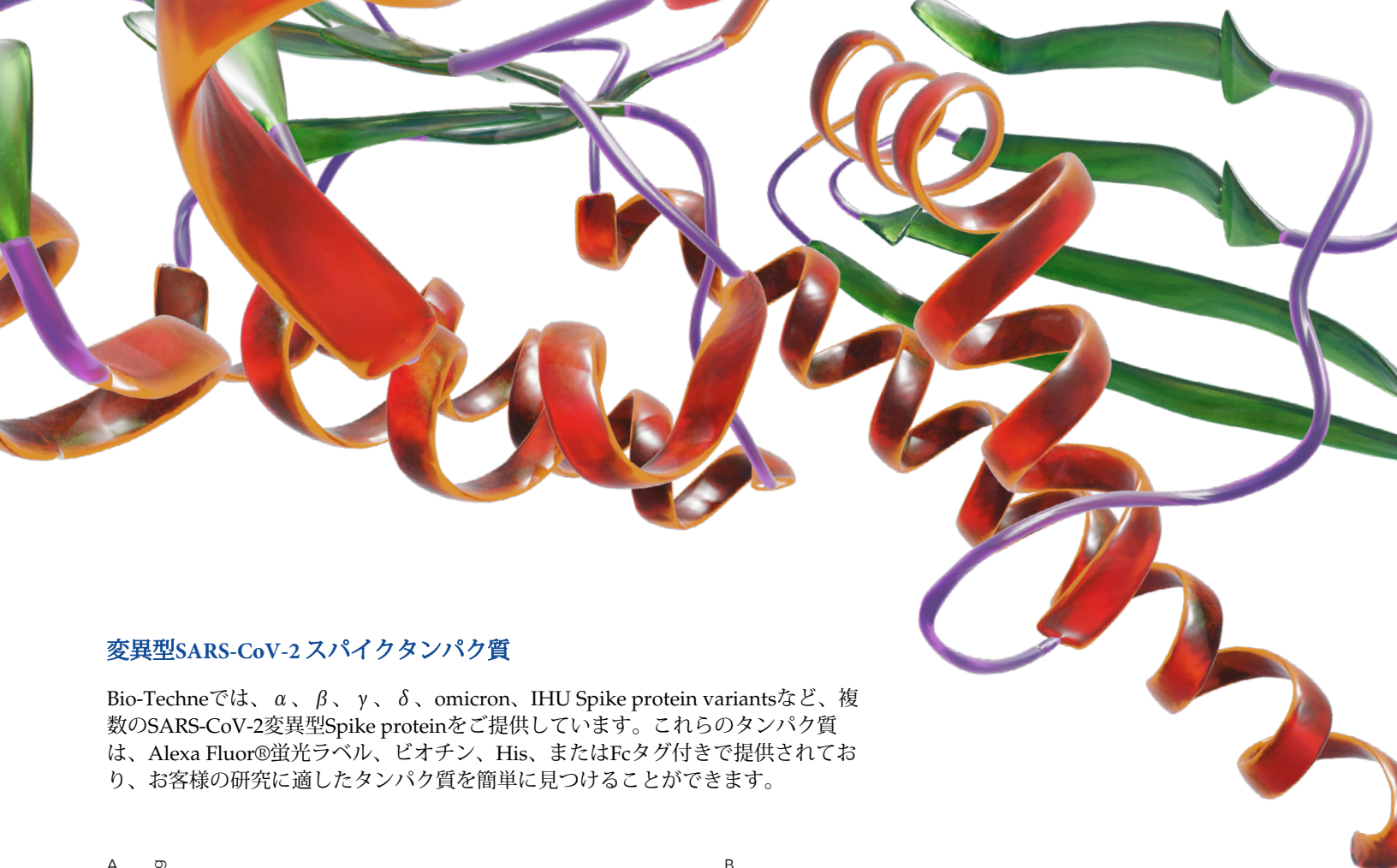
以下に示すデータ例は、弊社がSARS-CoV-2 Spikeタンパク質に対して行った生物活性および分析試験、ならびに組み換えSARS-CoV-2 Spike RBDタンパク質または組み換えヒトACE-2を用いた弊社のロット間整合性試験の例を示しています。これらのデータは、R&D Systems®の研究者が商業的なりリリースに先立ち、弊社の組換えタンパク質の特性を明らかにするために日常的に行っている分析の典型例です。



Bioactivity and Purity Testing of Recombinant SARS-CoV-2 Spike RBD His-tag Protein. (A) Recombinant SARS-CoV-2 Spike RBD His-tag Protein (HEK293-expressed; Catalog # 10500-CV) binds to Recombinant Human ACE-2 His-tag (Catalog # 933-ZN) in a functional ELISA. (B) The purity of Recombinant SARS-CoV-2 Spike RBD His-tag Protein (HEK293-expressed; Catalog # 10500-CV) was assessed by SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 32-38 kDa. (C) Binding of ACE-2 to SARS-CoV-2 Spike RBD by Surface Plasmon Resonance (SPR). Recombinant SARS-CoV-2 Spike RBD His-tag Protein (Catalog # 10500-CV) was immobilized on a Biacore Sensor Chip CM5, and binding to Recombinant Human ACE-2 (Catalog # 933-ZN) was measured at a concentration range between 0.37 nM and 93.5 nM. The double-referenced sensorgram was fit to a 1:1 binding model to determine the binding kinetics and affinity, with an affinity constant of $K_D = 2.149$ nM (Biacore T200).

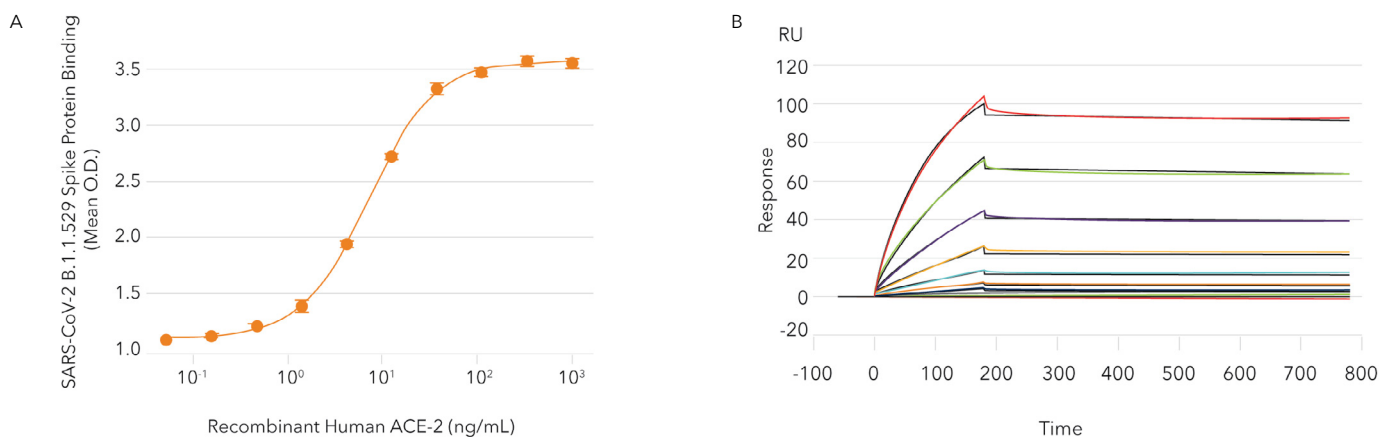


Bioactivity and Lot-to-Lot Consistency Testing of Recombinant SARS-CoV-2 Spike RBD Protein and Recombinant Human ACE-2. (A) Four independent lots of Recombinant SARS-CoV-2 Spike RBD His-tag Protein (HEK293-expressed; Catalog # 10500-CV) were tested for their ability to bind to Recombinant Human ACE-2 His-tag Protein (Catalog # 933-ZN) in a functional ELISA. The data demonstrates that the Recombinant SARS-CoV-2 Spike RBD Protein binds to Recombinant Human ACE-2 and that the four different lots of the SARS-CoV-2 Spike RBD protein display lot-to-lot consistency. (B) Four independent lots of Recombinant Human ACE-2 His-tag Protein (Catalog # 933-ZN) were tested for their ability to bind to Recombinant SARS-CoV-2 Spike RBD Fc Chimera Protein (Catalog # 10499-CV) in a functional ELISA. The data demonstrates that the Recombinant Human ACE-2 Protein binds to the Recombinant SARS-CoV-2 Spike RBD Protein and that the four different lots of the ACE-2 protein display lot-to-lot consistency.



変異型SARS-CoV-2 スパイクタンパク質

Bio-Techneでは、 α 、 β 、 γ 、 δ 、omicron、IHU Spike protein variantsなど、複数のSARS-CoV-2変異型Spike proteinをご提供しています。これらのタンパク質は、Alexa Fluor®蛍光ラベル、ビオチン、His、またはFcタグ付きで提供されており、お客様の研究に適したタンパク質を簡単に見つけることができます。



Bioactivity Testing of the SARS-CoV-2 Omicron Spike Variant Protein. (A) Recombinant SARS-CoV-2 B.1.1.529 Spike His-tag Protein (Catalog # 11060-CV) binds to Recombinant Human ACE-2 His-tag (Catalog # 933-ZN) in a functional ELISA. (B) Recombinant SARS-CoV-2 B.1.1.529 Spike His-tag Protein (Catalog # 11060-CV) was immobilized on a Biacore Sensor Chip CM5, and binding to Recombinant Human ACE-2 (Catalog # 933-ZN) was measured at a concentration range between 0.021 nM and 53.1 nM. The double-referenced sensorgram was fit to a 1:1 binding model to determine the binding kinetics and affinity, with an affinity constant of $K_d = 3.63$ nM. The experiment was performed on a Biacore T200, GE Healthcare.

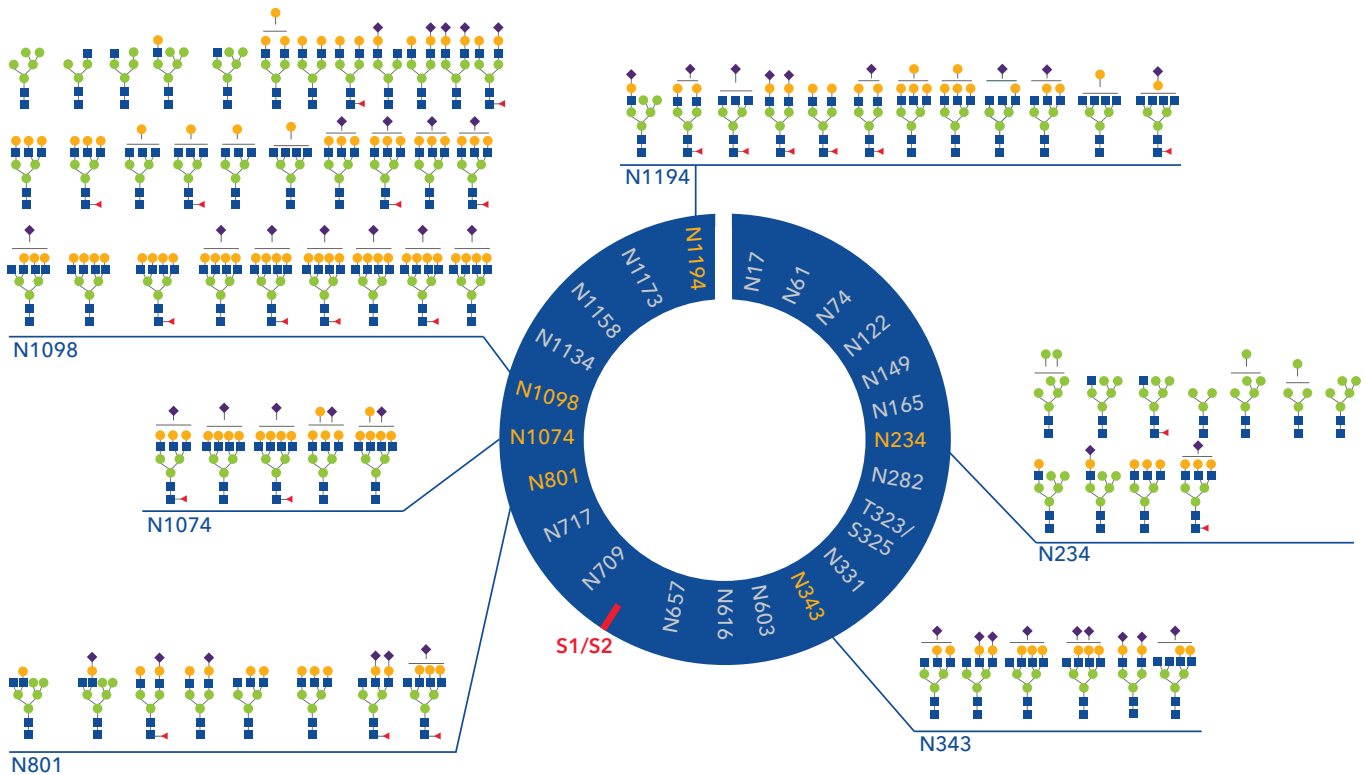
Alexa Fluor® is a registered trademark of Molecular Probes, Inc., Eugene, OR.

グリコシレーションフットプリント

SARS-CoV-2のSpikeタンパク質は、22箇所のN-結合型糖鎖と少なくとも2箇所のO-結合型糖鎖に宿主由来の糖鎖が広範に付加されていることが報告されています。これらの修飾は、Spikeタンパク質の安定性と溶解性を高め、免疫原性エピトープをカモフラージュし、宿主の免疫反応を回避する能力を高めると考えられています。そこで、昆虫細胞、HEK293細胞、CHO細胞から得られたSARS-CoV-2 Spike RBDタンパク質の糖鎖修飾状態を蛍光直接標識法で解析し、その特性を明らかにしました。

SARS-CoV-2 Spike Protein Glycosylation

● Man ● Gal ■ GlcNAc ◆ Sialic Acid ▲ Fuc



Adapted from Shajahan et al., *Glycobiology*, 2020

Analysis of the Glycosylation of the SARS-CoV-2 Spike Protein. Recombinant SARS-CoV-2-Spike Protein (Catalog # 10549-CV) was reduced, alkylated, and digested with trypsin prior to analysis using a Thermo Scientific™ Vanquish UHPLC coupled with a Thermo Scientific™ Q Exactive HF Quadrupole-Orbitrap™ Mass Spectrometer operating in data-dependent scanning mode. Data was analyzed using Thermo Scientific™ BioPharma Finder software, using the CHO glycosylation database.

SARS-CoV-2 スパイクタンパク質のグリコシレーションについてもっと知る |

rndsystems.com/resources/articles/glycosylation-receptor-binding-domain-covid-19-virus-spike-protein

コロナウイルス研究に適したリコンビナントタンパク質

Spike Ectodomain S1+S2				
Protein	Coronavirus Type	Source	Tag	Catalog #
Spike Protein	SARS-CoV-2	HEK293	His	10549-CV
	SARS-CoV-2	CHO	His	10586-CV
	SARS-CoV	HEK293	His	10683-CV
	Bat CoV	CHO	His	10660-CV
Spike Protein Full Length 16-1273	SARS-CoV-2	HEK293		11058-CV
Spike Protein Biotinylated	SARS-CoV-2	HEK293	His, Biotin	BT10549
		CHO	His, Avi-tag	AVI10586
		HEK293	GCN4-IZ, His, Avi-tag	AVI10561
Spike Protein + GCN4-IZ	SARS-CoV-2	HEK293	GCN4-IZ, His	10561-CV

Spike Ectodomain S1+S2				
Protein	Coronavirus Type	Source	Tag	Catalog #
Spike Protein + GCN4-IZ	SARS-CoV-2	HEK293	GCN4-IZ, His, Alexa Fluor® 488	AFG10561
			GCN4-IZ, His, Alexa Fluor® 647	AFR10561
	SARS-CoV-2	CHO	GCN4-IZ, His	10638-CV
	SARS-CoV	HEK293	GCN4-IZ, His	10684-CV
	SARS-CoV	CHO	GCN4-IZ, His	10581-CV
	MERS-CoV	HEK293	GCN4-IZ, His	10739-CV
	Bat CoV	HEK293	GCN4-IZ, His	10688-CV

Spike RBD				
Protein	Coronavirus Type	Source	Tag	Catalog #
Spike Protein RBD	SARS-CoV-2	HEK293	Fc	10499-CV
	SARS-CoV-2	CHO	Fc	10542-CV
	SARS-CoV-2	Sf21	Fc	10565-CV
	SARS-CoV-2	HEK293	mFc	10657-CV
	SARS-CoV-2	HEK293	His	10500-CV
	SARS-CoV-2	HEK293	His, Alexa Fluor® 488	AFG10500
			His, Alexa Fluor® 647	AFR10500
	SARS-CoV-2	CHO	His	10534-CV
	SARS-CoV-2	Tn5	His	10523-CV
	SARS-CoV-2	HEK293	Flag	10689-CV
	SARS-CoV	CHO	His	10558-CV
	SARS-CoV	CHO	Fc	10559-CV

Spike RBD				
Protein	Coronavirus Type	Source	Tag	Catalog #
Spike Protein RBD	SARS-CoV	HEK293	His	10583-CV
	SARS-CoV	HEK293	Fc	10582-CV
	MERS-CoV	HEK293	His	10636-CV
	MERS-CoV	CHO	His	10621-CV
	HCoV-NL63	HEK293	His	10605-CV
	HCoV-HKU1	HEK293	His	10600-CV
	HCoV-229E	HEK293	His	10612-CV
	Bat CoV	CHO	Fc	10556-CV
	Bat CoV	CHO	His	10593-CV
	Spike Protein RBD (GCN4-IZ trimer)	SARS-CoV-2	HEK293	His
SARS-CoV-2		CHO	His	10659-CV
Spike Protein RBD, Biotinylated	SARS-CoV-2	HEK293	His	BT10500
	SARS-CoV-2	HEK293	Avi-tag, Fc	AVI10499

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S1 Subunit				
Protein	Coronavirus Type	Source	Tag	Catalog #
Spike S1 Protein	SARS-CoV-2	HEK293	His	10569-CV
	SARS-CoV-2	CHO	His	10693-CV
	SARS-CoV-2	Sf21	His	10522-CV
	SARS-CoV-2	Tn5	Fc	10622-CV
	SARS-CoV-2	CHO	Fc	10623-CV
	SARS-CoV	HEK293	His	10783-CV
	SARS-CoV	CHO	His	10745-CV
	SARS-CoV	Sf21	His	10570-CV
	SARS-CoV	HEK293	Fc	10685-CV
	SARS-CoV	CHO	Fc	10782-CV

S1 Subunit				
Protein	Coronavirus Type	Source	Tag	Catalog #
Spike S1 Protein	MERS-CoV	HEK293	His, GCN4	10737-CV
	MERS-CoV	CHO	Fc	10606-CV
	Bat CoV	CHO	His	10662-CV
	Bat CoV	HEK293	His, GCN4	10661-CV
Spike S1 Protein Biotinylated	SARS-CoV-2	HEK293	His	BT10569
	SARS-CoV-2	CHO	His, Avi-tag	AVI10693
Spike S1 + HR1/HR2 Fusion	SARS-CoV-2	CHO	His	10687-CV

S2 Subunit				
Protein	Coronavirus Type	Source	Tag	Catalog #
SARS-CoV-2 Spike S2 Subunit	SARS-CoV-2	HEK293	His	10594-CV
	SARS-CoV-2	Tn5	His	10584-CV
	SARS-CoV-2	HEK293	His	10639-CV
SARS-CoV-2 Spike S2 Subunit (GCN4-IZ)	SARS-CoV-2	HEK293	His	10590-CV
	SARS-CoV-2	HEK293	His	10640-CV

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変異型SARS-CoV-2 スパイクタンパク質

Omicron Variant B.1.1.529				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein	Omicron variant B.1.1.529	HEK293	His	11060-CV
		HEK293	GCN4-IZ, His	11061-CV
		HEK293	His, Avi-tag	AVI11060
		HEK293	His, Alexa Fluor® 488	AFG11060
		HEK293	His, Alexa Fluor® 647	AFR11060
		HEK293	GCN4-IZ, His, Avi-tag	AVI11061
		HEK293	GCN4-IZ, His, Alexa Fluor® 488	AFG11061
		HEK293	GCN4-IZ, His, Alexa Fluor® 647	AFR11061
		HEK293	His, Biotinylated	BT11060
		HEK293	GCN4-IZ, His, Biotinylated	BT11061

Omicron Variant B.1.1.529				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein	Omicron variant B.1.1.529 BA.2	HEK293	GCN4-IZ, His	11109-CV
Spike Protein RBD	Omicron variant B.1.1.529	HEK293	His	11056-CV
		HEK293	Fc	11057-CV
		HEK293	His, Avi-tag	AVI11056
		HEK293	His, Biotinylated	BT11056
		HEK293	His, Alexa Fluor® 488	AFG11056
		HEK293	His, Alexa Fluor® 647	AFR11056
		HEK293	His	11094-CV
Spike Protein S1	Omicron variant B.1.1.529	HEK293	His	11070-CV
	GCN4-IZ, His		Preorder	
Spike Protein S2	Omicron variant B.1.1.529		His	Preorder
SARS-CoV-2 Nucleocapsid Protein	Omicron variant B.1.1.529	Sf21	His	11099-CV

IHU Variant B.1.640.2				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein RBD	IHU variant R346S, N394S, Y449N, E484K, F490S, N501Y	HEK293	His	11097-CV

Delta Variant B.1.617.2 (India)				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein	Delta variant B.1.617.2 T19R, G142D, E156G, F157del, R158del, L452R, T478K, D614G, P681R, D950N	HEK293	His	10942-CV
		HEK293	GCN4-IZ, His	10878-CV
		HEK293	GCN4-IZ, His, Avi-tag	AVI10878
		HEK293	Alexa Fluor® 488, GCN4-IZ, His	AFG10878
			Alexa Fluor® 647, GCN4-IZ, His	AFR10878
Spike Protein	Delta variant B.1.617.2 T19R, G142D, Y144del, E156G, F157del, R158del, A222V, L452R, T478K, D614G, P681R, D950N	HEK293	GCN4-IZ, His	10924-CV
Spike Protein	Delta Plus AY.1 T19R, T95I, G142D, E156G, F157del, R158del, W258L, K417N, L452R, T478K, D614G, P681R, D950N	HEK293	GCN4-IZ, His	10922-CV
Spike Protein	Delta Plus AY.2 T19R, V70F, G142D, E156G, F157del, R158del, R222V, K417N, L452R, T478K, D614G, P681R, D950N	HEK293	GCN4-IZ, His	10923-CV
Spike RBD	Delta variant B.1.617.2 L452R, T478K	HEK293	His	10876-CV
			Fc	10901-CV
			His, Avi-tag	AVI10876
Spike RBD	Delta variant B.1.617.2 G446V, L452R, T478K	HEK293	His	10982-CV
			His, Avi-tag	AVI10982
Spike RBD	Delta Plus AY.1/AY.2 K417N, L452R, T478K	HEK293	His	10905-CV
			Fc	10908-CV
Spike RBD	G446V, L452R, T478K	HEK293	Fc	10983-CV
Spike RBD	T478K	HEK293	His	10875-CV

Alpha Variant B.1.1.7 (UK)				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein	Alpha variant B.1.1.7 H69del, V70del, Y145del, N501Y, A570D, D614G, P681H, T716I, S982A, D1118H	HEK293	His	10748-CV
			GCN4-IZ, His	10796-CV
		HEK293	GCN4-IZ, His, Biotin	BT10796
			GCN4-IZ, His, Avi-tag	AVI10796
		HEK293	Alexa Fluor® 488, GCN4-IZ, His	AFG10796
Alexa Fluor® 647, GCN4-IZ, His	AFR10796			
Spike Protein	Alpha variant B.1.1.7 + E484K	HEK293	GCN4-IZ, His	10824-CV
Spike Protein	Alpha variant B.1.1.7 + S494P	HEK293	GCN4-IZ, His	10854-CV
Spike RBD	N501Y (Alpha, Beta, Gamma)	HEK293	His	10730-CV
			His, Biotin	BT10730
			His, Avi-tag	AVI10730
	E484K, N501Y	HEK293	His	10788-CV

Beta Variant B.1.351 (South Africa)				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein	Beta variant B.1.351 D80A, D215G, L242del, A243del, L244del, K417N, E484K, N501Y, D614G, A701V	HEK293	His	10777-CV
		HEK293	GCN4-IZ, His	10786-CV
		HEK293	Alexa Fluor® 488, GCN4-IZ, His	AFG10786
			Alexa Fluor® 647, GCN4-IZ, His	AFR10786
Spike Protein	Beta variant B.1.351 + L18F D80A, D215G, L242del, A243del, L244del, K417N, E484K, N501Y, D614G, A701V	HEK293	GCN4-IZ, His	10785-CV
		HEK293	GCN4-IZ, His, Avi-tag	AVI10785
Spike RBD	Beta variant B.1.351 K417N, E484K, N501Y	HEK293	His	10735-CV
		HEK293	Fc	10935-CV
		HEK293	His, Avi-tag	AVI10735
	N501Y (Alpha, Beta, Gamma)	HEK293	His	10730-CV
		HEK293	Fc	10717-CV
	E484K, N501Y	HEK293	His	10788-CV
	E484K	HEK293	His	10747-CV

Gamma Variant P.1 (Brazil)				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein	Gamma Variant P.1 L18F, T20N, P26S, D138Y, R190S, K417T, E484K, N501Y, D614G, H655Y, T1027I, V1176F	HEK293	GCN4-IZ, His	10795-CV
		HEK293	GCN4-IZ, His, Avi-tag	AVI10795
		HEK293	Alexa Fluor® 488, GCN4-IZ, His	AFG10795
			Alexa Fluor® 647, GCN4-IZ, His	AFR10795
Spike RBD	Gamma Variant P.1 K417T, E484K, N501Y	HEK293	His	10775-CV
			Fc	10914-CV
	N501Y (Alpha, Beta, Gamma)	HEK293	His	10730-CV
		HEK293	Fc	10717-CV
	E484K, N501Y	HEK293	His	10788-CV
	E484K	HEK293	His	10747-CV

Kappa Variant B.1.617.1 (India)				
Spike Protein	Description	Source	Tag	Catalog #
Spike Protein	Kappa variant B.1.617.1 G142D, E154K, L452R, E484Q, D614G, P681R, Q1071H	HEK293	His	10978-CV
		HEK293	GCN4-IZ, His	10861-CV
		HEK293	Alexa Fluor® 488, GCN4-IZ, His	AFG10861
			Alexa Fluor® 647, GCN4-IZ, His	AFR10861
Spike RBD	Kappa variant B.1.617.1 L452R, E484Q	HEK293	His	10846-CV
			Fc	10906-CV
		HEK293	His, Avi-tag	AVI10846

Nucleocapsid, NSP, and M Proteins			
Protein	Source	Tag	Catalog #
SARS-CoV-2 Nucleocapsid Protein	Sf21	His	10474-CV
		Biotin, His	BT10474
SARS-CoV Nucleocapsid Protein	Sf21	His	10710-CV
MERS-CoV Nucleocapsid Protein	Sf21	His	10521-CV
HCoV-OC43 Nucleocapsid Protein	Sf21	His	10709-CV
HCoV-229E Nucleocapsid Protein	Sf21	His	10708-CV
SARS-CoV-2 NSP1	<i>E. coli</i>	His	10666-CV
SARS-CoV-2 NSP7	<i>E. coli</i>	His	10632-CV
SARS-CoV-2 NSP8	<i>E. coli</i>	His	10633-CV
SARS-CoV-2 NSP9	<i>E. coli</i>	His	10631-CV
SARS-CoV-2 NSP10	<i>E. coli</i>	His	10630-CV
SARS-CoV-2 NSP12	Sf21	His	10686-CV
SARS-CoV-2 NSP14	<i>E. coli</i>	His	10667-CV
SARS-CoV-2 NSP16/10 Complex	<i>E. coli</i>	His	10634-CV
SARS-CoV-2 ORF-7a	CHO	Fc	10668-CV
SARS-CoV-2 Membrane (M) Protein	CHO	Fc	10690-CV

Coronavirus Proteases			
Protein	Source	Tag	Catalog #
SARS-CoV-2 Papain-like Protease	<i>E. coli</i>	GST	E-611
SARS Virus Papain-like Protease	<i>E. coli</i>	His	E-610
MERS-CoV Papain-like Protease	<i>E. coli</i>	His	E-609
SARS-CoV-2 3CL Protease	<i>E. coli</i>	None	E-720
SARS-CoV 3CL Protease	<i>E. coli</i>	None	E-718
MERS-CoV 3CL Protease	<i>E. coli</i>	None	E-719

COVID-19のターゲットとなる主要なプロテアーゼについてもっと知る | rndsystems.com/resources/articles/3cl-plpro-key-protease-targets-covid19

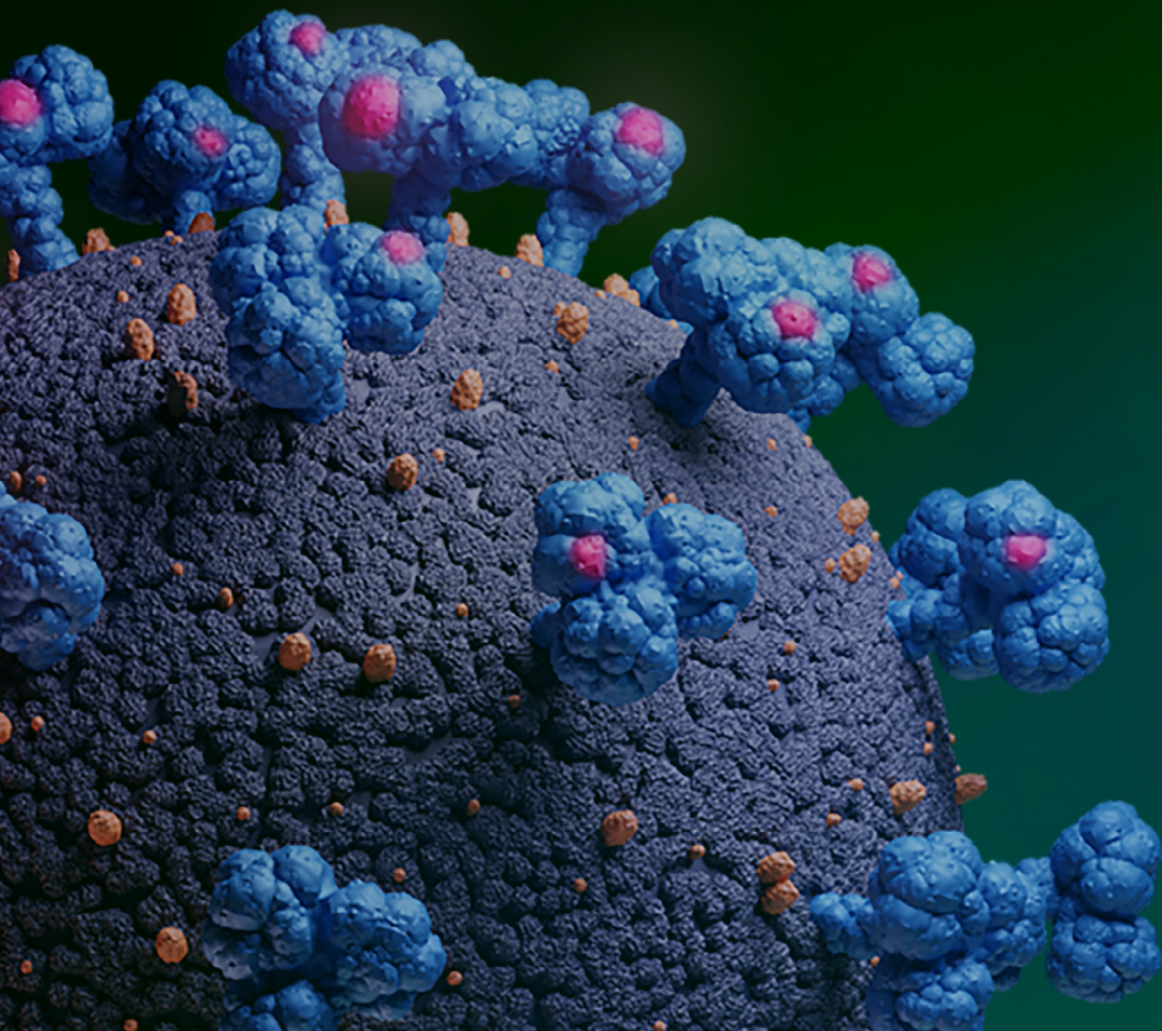
Receptor Recognition				
Protein	Species	Source	Tag	Catalog #
ACE-2	Human	NS0	His	933-ZN
		CHO	Fc	10544-ZN
	Mouse	CHO	His	3437-ZN
	Rat	NS0	His	4516-ZN
	Pig	HEK293	His	10545-ZN
	Dog	HEK293	His	10566-ZN
	Chicken	HEK293	His	10592-ZN
	Ferret	HEK293	His	10635-ZN
	Cyno	NS0	His	10619-ZN
	Hamster	HEK293	His	10578-ZN
Biotinylated ACE-2	Human	CHO	Avi-tag, His	AVI10579
		CHO	Avi-tag, Fc	AVI10544
		HEK293	Avi-tag, His	Please Inquire
		HEK293	Avi-tag, Fc	Please Inquire
		NS0	His	BT933
		CHO	Fc	BT10544

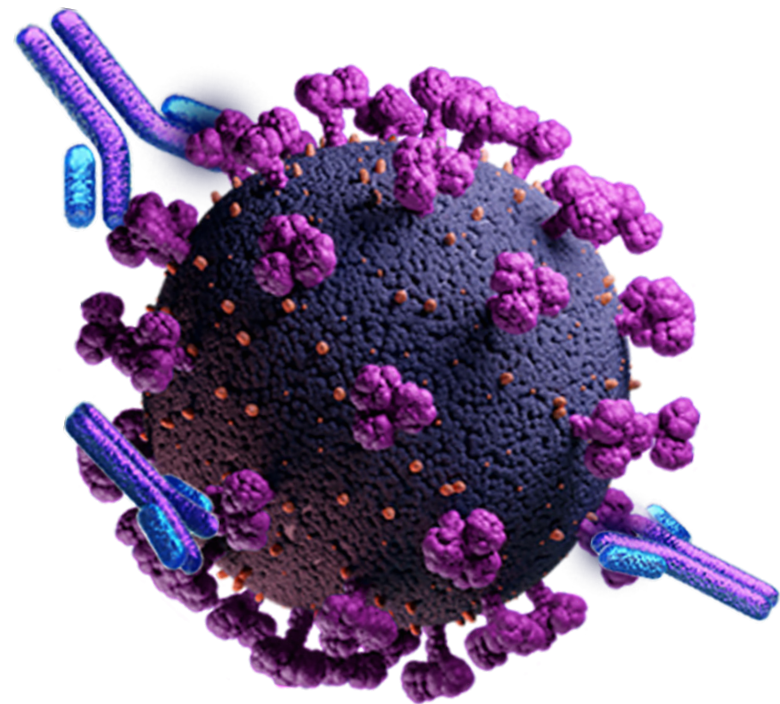
Receptor Recognition				
Protein	Species	Source	Tag	Catalog #
Alexa Fluor® ACE-2	Human	NS0	Alexa Fluor® 488, His	AFG933
		NS0	Alexa Fluor® 647, His	AFR933
DPPIV	Human	NS0	His	9168-SE
	Mouse	NS0	His	954-SE
	Cyno	HEK293	His	9637-SE
Aminopeptidase N/CD13	Human	NS0	His	3815-ZN
	Mouse	NS0	His	2335-ZN
CEACAM-1	Human	NS0	His	2244-CM
LY6E	Human	HEK293	Fc	9970-L6
EMMPRIN/CD147	Human	NS0	Fc, His	972-EMN
	Mouse	NS0	His	772-EM
Neuropilin-1	Human	NS0	His	3870-N1
	Mouse	NS0	His	5994-N1
	Rat	NS0	Fc, His	566-NNS
	Rat	Sf21	Fc, His	566-N1

全てのSARS-CoV-2 タンパク質を見る | rndsystems.com/products/proteins-coronavirus-research

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SARS-CoV-2研究における抗体

Bio-Techneでは、R&D Systems®社およびNovus Biologicals®社の抗体を取り扱っており、データシートに記載されているように複数の異なるアプリケーションに適合する抗体を提供しています。SARS-CoV-2

Spike、Nucleocapsid、Membrane、Envelopeタンパク質、SARS-CoV-2 3CLプロテアーゼ、ACE-2を検出する抗体や、SARS-CoV-2 Spike RBD、ACE-2ブロック抗体など、SARS-CoV-2研究用の多数の抗体コレクションを提供します。

SARS-CoV-2研究においてBio-Techne製品を使用することの利点

高い特異性と再現性

Bio-Techneの抗体は、ウェブサイトやデータシートに記載されているアプリケーションでテストされています。また、品質管理上、ロット間の整合性を確認しています。

100% の保証

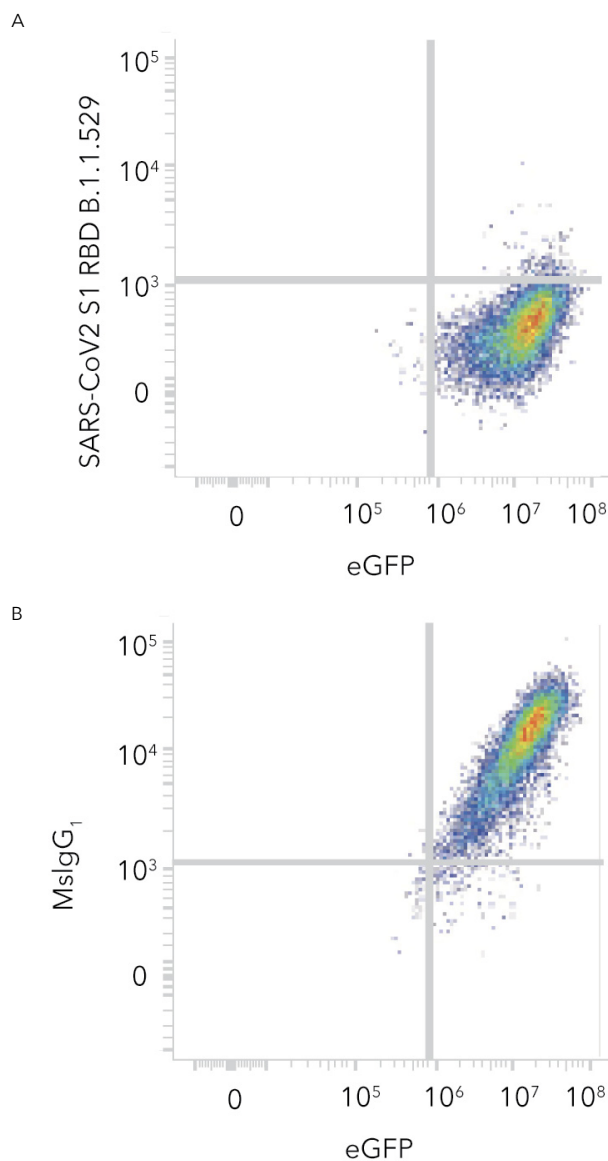
Bio-Techneの抗体はデータシートに記載の交差性と適用において正常に使えることを保証しています。

アプリケーションベースのデータ

Bio-Techneの抗体には、その高い性能を示すアプリケーションベースのデータがあります。これらの情報は、弊社ウェブサイトの製品ページや製品データシートで確認することができます。

SARS-CoV-2、ACE-2を検出する抗体

細胞や組織におけるSARS-CoV-2の発現を検出し、ウイルスが標的とする細胞タイプについて理解を深めるために、弊社ではSARS-CoV-2 Spike RBD, Spike S1 or S2 subunits, SARS-CoV-2 Nucleocapsid, Membrane or Envelope proteins, and ACE-2 に対する抗体を提供しています。いずれも、IHC、Western blot、Simple Western、CyTOF、またはフローサイトメトリーのうち一つあるいは複数の適用があります。



SARS-Cov-2 Omicron protein (B.1.1.529 variant) binding to ACE-2-transfected Human Cell Line is Blocked by SARS-Cov-2 Spike 1 Antibody. In a functional flow cytometry test, Recombinant SARS-Cov-2 Omicron (B.1.1.529 variant) His-tagged protein (R&D Systems, Catalog # 11056-CV) binds to HEK293 human embryonic kidney cell line transfected with recombinant human ACE-2 and eGFP. (A) Binding is completely blocked by 50 µg/mL of Mouse Anti-SARS-Cov-2 Spike 1 Monoclonal Antibody (R&D Systems, Catalog # MAB105405) but not by (B) Mouse IgG, Isotype Control (R&D Systems, Catalog # MAB002). Protein binding was detected with an APC-conjugated Mouse Anti-His Monoclonal Antibody (R&D Systems, Catalog # IC050A).

Antibodies for SARS-CoV-2 OR ACE-2 Detection				
Product	Brand	Catalog #	Applications	Fluorochrome-Conjugated Antibodies (Catalog # - Fluorochrome)
Human/Rat/Hamster ACE-2 Antibody	R&D Systems	MAB9332	FC, IHC, CyTOF-ready	FAB9332-G, N, P, R, S, T, U, V
Human ACE-2 Antibody	R&D Systems	MAB9333	FC, CyTOF-ready	FAB9333-G, N, R, S, T, U, V
Human ACE-2 Antibody	R&D Systems	MAB9334	FC, CyTOF-ready	FAB9334-G, N, R, S, T, U, V
Human/Mouse/Rat/Hamster ACE-2 Antibody	R&D Systems	AF933	B/N, FC, IHC, IP, SW	FAB933-A, G, N, P, R, S, T, U, V
SARS-CoV-2 Spike S1 Subunit Antibody	R&D Systems	MAB105403	FC, IHC, CyTOF-ready, WB	FAB105403-G, N, R, S, T, U, V
SARS-CoV-2 Nucleocapsid Antibody	R&D Systems	MAB10474	IHC, WB	
SARS-CoV-2 Nucleocapsid Antibody	R&D Systems	MAB104741	IHC, WB	

Application Key: B/N Blocking/Neutralization, CyTOF-ready Mass Cytometry, E ELISA, FC Flow Cytometry, IHC Immunohistochemistry, IP Immunoprecipitation, SW Simple Western WB Western Blot

Fluorochrome Key: A: Allophycocyanin; G: Alexa Fluor® 488; N: Alexa Fluor® 700; P: Phycoerythrin; R: Alexa Fluor® 647; S: Alexa Fluor® 750; T: Alexa Fluor® 594; U: Alexa Fluor® 350; V: Alexa Fluor® 405

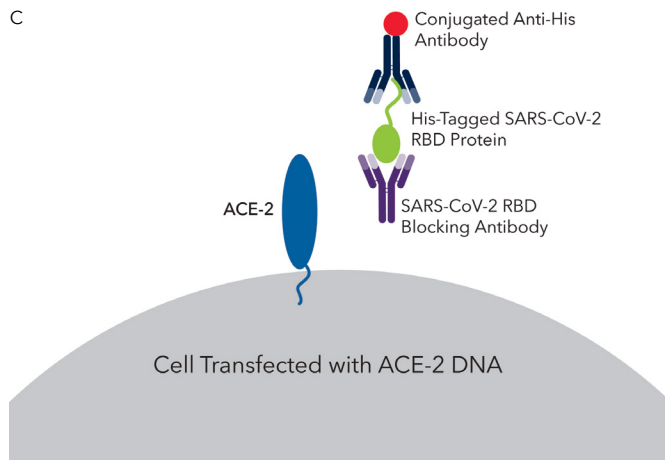
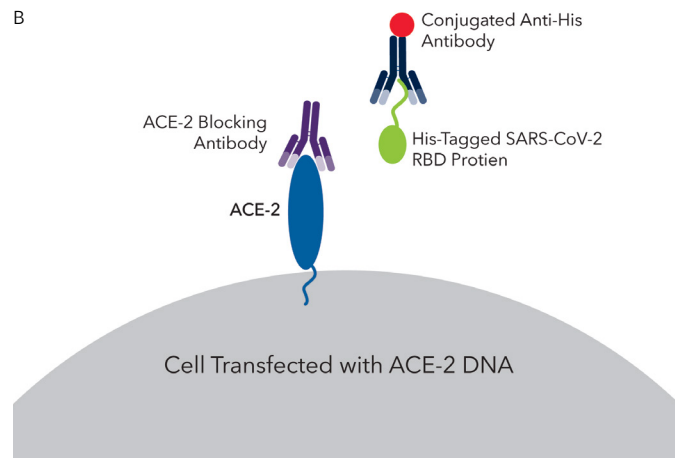
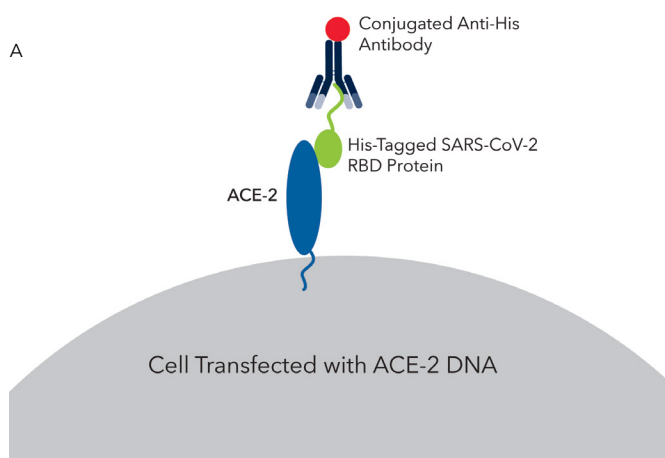
フローサイトメトリで使用可能なCOVID-19抗体を見る
[| rndsystems.com/products/antibodies-coronavirus-research](https://rndsystems.com/products/antibodies-coronavirus-research)

More SARS-COV-2 Antibodies from Bio-Techne				
Structural Proteins	Spike	Nucleocapsid	Envelope	Membrane
Non-structural proteins (NSPs)	NSP1	NSP2	NSP3	NSP4
	NSP5	NSP6	NSP7	NSP8
	NSP9	NSP10	NSP11	NSP12
	NSP13	NSP14	NSP15	NSP16
Open Reading Frames (ORF) Accessory Proteins	ORF3a	ORF3b	ORF6	ORF7a
	ORF8	ORF9b	ORF9c	ORF10

SARS-CoV-2 Spike RBD および ACE-2 ブロッキング抗体とフローサイトメトリーの In Vitro ブロッキングアッセイ

SARS-CoV-2のSタンパク質は、そのRBDを介してACE-2を認識し、結合します。従って、両方のタンパク質が治療ターゲットとして有効と考えられます。例えば、ACE-2またはSタンパク質のRBDのどちらかを標的とする抗体で、ACE-2とSタンパク質の相互作用をブロックすれば、SARS-CoV-2の感染を防げる可能性があります。SARS-CoV-2は高い病原性と感染性を示し、バイオセーフティーレベル3の条件下で取り扱う必要があります。COVID-19治療薬の開発はこれらによって制約を受けることから、我々はACE-2とSタンパク質の結合を阻害する抗体や小分子の効果を評価するフローサイトメトリーに基づくin vitroアッセイを開発しました。

- 弊社の、数十年にわたるバイオアッセイの経験と、ブロッキング抗体の開発に関する専門知識を活用することができます。
- このサロゲートアッセイはBSL-2またはBSL-3の研究施設を必要としません。
- SARS-CoV-2のスパイク蛋白、RBD蛋白、ACE-2受容体をブロックする研究用抗体があります。
- LlaMABody™ Camelid シングルドメイン抗体を含む、カスタムリコンビナント抗体エンジニアリングオプションも用意しています。



Flow Cytometry *In Vitro* Blocking Assay Principle. (A) Cells are transfected with human ACE-2 DNA and express the receptor on their cell surface. When incubated with a recombinant SARS-CoV-2 Spike RBD His-tag Protein, the protein will bind to ACE-2. SARS-CoV-2 RBD protein binding is detected with an APC-conjugated His-Tag Antibody. (B) Incubating cells with an ACE-2 blocking antibody prior to the SARS-CoV-2 Spike RBD Protein allows the ACE-2 antibody to bind to the ACE-2 receptor, blocking SARS-CoV-2 Spike RBD protein binding. (C) Incubating SARS-CoV-2 Spike RBD protein with a SARS-CoV-2 Spike RBD blocking antibody prior to incubating with the cells allows the blocking antibody to bind to the SARS-CoV-2 Spike RBD protein and disrupt its interaction with ACE-2.

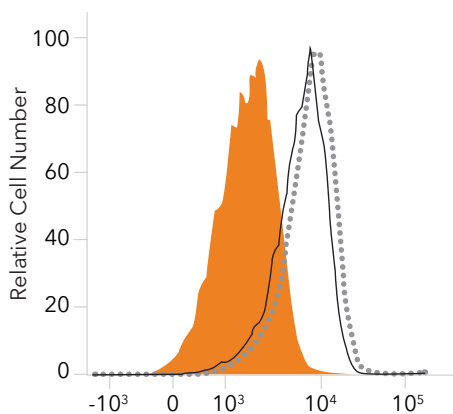
Flow Cytometry Blocking Assay Tools				
Product	Brand	Catalog #	Applications	Additional Information
Human/Mouse/Rat/Hamster ACE-2 Antibody	R&D Systems	AF933	B/N, FC, IHC, IP, SW, WB	Conjugates Available: FAB933-A, G, N, P, R, S, T, U, V
SARS-CoV-2 Spike RBD LlaMABody™ VHH His-tag Antibody	R&D Systems	LMAB10869	B/N	LlaMABody™- Camelid Antibody
SARS-CoV-2 Spike RBD LlaMABody™ Bivalent VHH HulgG2 Fusion Antibody	R&D Systems	LMAB10731	B/N	LlaMABody™- Camelid Antibody
SARS-CoV-2 Spike RBD LlaMABody™ Bivalent VHH HulgG2 Fusion Antibody	R&D Systems	LMAB10870	B/N	LlaMABody™- Camelid Antibody
SARS-CoV-2 Spike RBD LlaMABody™ VHH His-tag Antibody	R&D Systems	LMAB12503	B/N	LlaMABody™- Camelid Antibody
SARS-CoV-2 Spike S1 Subunit Antibody	R&D Systems	MAB105405	B/N	Blocks Omicron Variant
SARS-CoV-2 Spike RBD Antibody	R&D Systems	MAB105802	B/N, IHC	
SARS-CoV-2 Spike RBD Antibody	R&D Systems	MAB105801	B/N	
Mouse Anti-Human ACE-2 Monoclonal Antibody	Novus Biologicals	NBP2-80038	B/N, E, FA, FC, IHC, WB	Conjugates Available

View all R&D Systems [LlaMABody™- Camelid Antibodies](#).

Application Key: B/N Blocking/Neutralization E ELISA FA Functional Assay FC Flow Cytometry IHC Immunohistochemistry IP Immunoprecipitation SW Simple Western WB Western Blot

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rndsystems.com/products/antibodies-coronavirus-research



Blocking SARS-CoV-2 Binding to ACE-2 with a SARS-CoV-1/2 Spike RBD Llamabody. In a functional flow cytometry test, Recombinant SARS-CoV-2 Spike RBD His-tag Protein (Catalog # 10534-CV) binds to HEK293 human embryonic kidney cell line transfected with human ACE-2 (gray dotted line). Protein binding was detected with an APC-conjugated Mouse Anti-His Tag Monoclonal Antibody (R&D Systems, Catalog # IC050A). Spike RBD binding to ACE-2 is completely blocked by an Anti-SARS-CoV-1/2 Spike RBD Llamabody Antibody (R&D Systems, Catalog # LMAB10541; orange histogram). A Mouse Anti-Human DC-SIGN/CD209 Monoclonal Antibody (R&D Systems, Catalog # MAB161) was used as an irrelevant control (black line).

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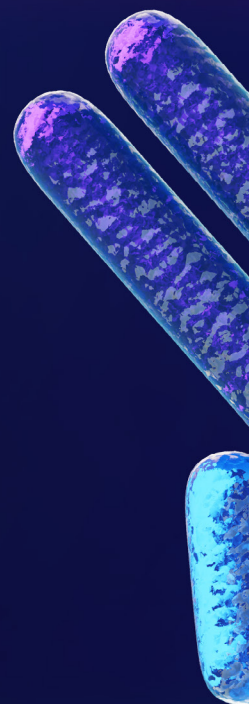
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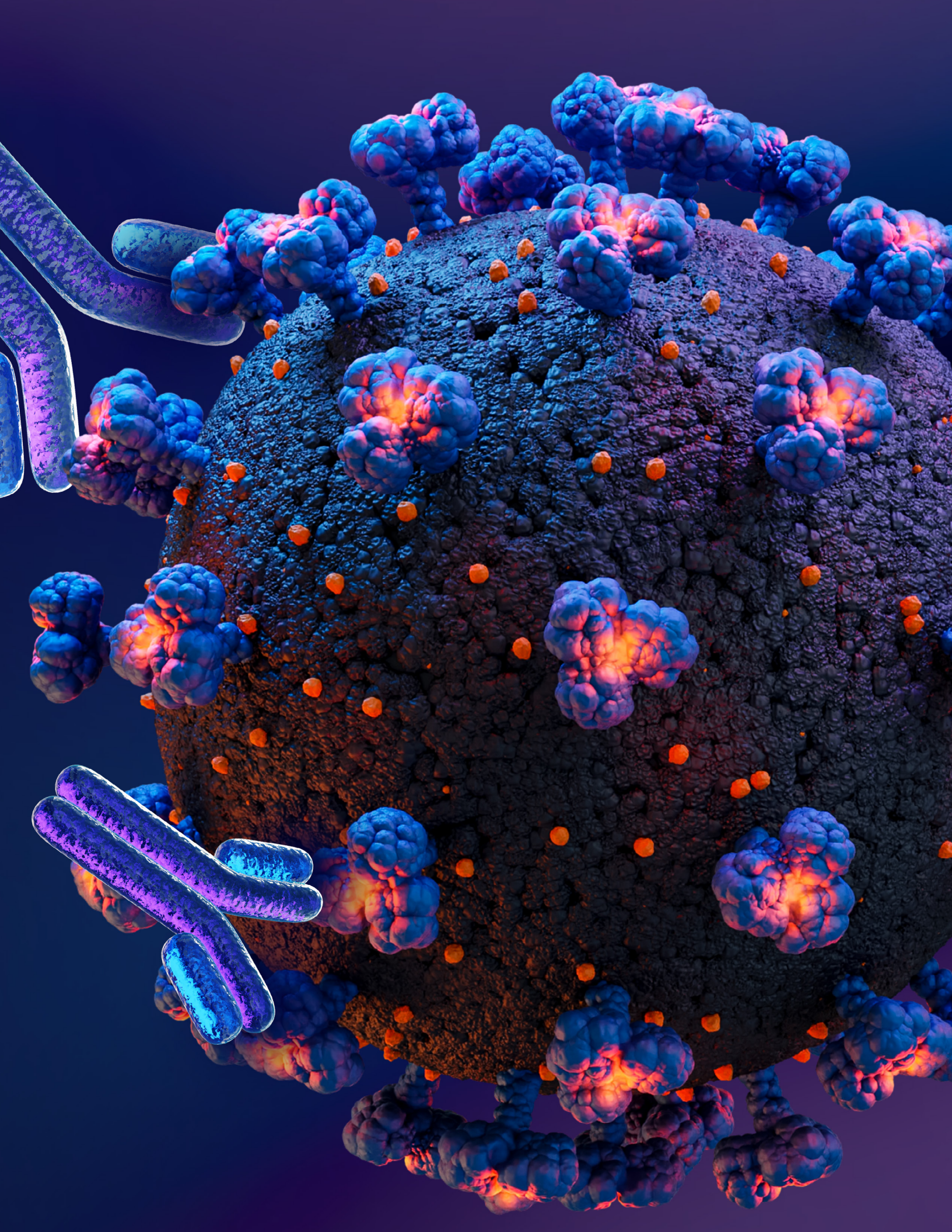
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