

CERTIFICATE OF ANALYSIS

Product Name	HCoV-229E Spike Glycoprotein
Cat No.	RP30010
Lot No	E1317320E
Sequence	See appendix for details
Modification	N/A
Size	Subpool 1: 3.65mg and Subpool 2: 3.625mg
Storage	-20°C
Recommended Solvent*	dimethyl sulfoxide(Analytical grade)
HPLC purity	Crude
Appearance	White lyophilized powder
Comments	TFA salts

*Note: Above recommended solvents for reference only. If there is any request for detailed dissolution conditions, we suggest you choose our 'Peptide Solubility Test Service'.

Caution:

For laboratory or further manufacturing use only. Not intended for household use. If you have any questions about the Certificate of Analysis, please contact our customer service representative at 1-877-436-7274 (TollFree), or 1-732-885-9188.



Certified by:

Date: 07/15/2021

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Appendix:

Sequence	Subpool 1		
	MW	Quantity	Purity
MFVLLVAYALLHIAG	1631.04	25ug	Crude
LVAYALLHIAGCQTT	1573.86	25ug	Crude
ALLHIAGCQTTNGLN	1525.74	25ug	Crude
IAGCQTTNGLNTSYS	1529.64	25ug	Crude
QTTNGLNTSYSVCNG	1558.63	25ug	Crude
GLNTSYSVCNGCVGY	1536.69	25ug	Crude

SYVCNGCVGYSENV	1580.70	25ug	Crude
CNGCVGYSENVFAVE	1590.74	25ug	Crude
VGYSENVFAVESGGY	1577.65	25ug	Crude
ENVFAVESGGYIPSD	1583.66	25ug	Crude
AVESGGYIPSDFAFN	1573.66	25ug	Crude
GGYIPSDFAFNWFL	1747.91	25ug	Crude
PSDFAFNWFLTNT	1786.94	25ug	Crude
AFNNWFLTNTSSVV	1712.91	25ug	Crude
WFLTNTSSVVDGVV	1636.85	25ug	Crude
TNTSSVVDGVVRSFQ	1595.72	25ug	Crude
SVVDGVVRSFQPLLL	1628.92	25ug	Crude
GVVRSFQPLLLNCLW	1745.10	25ug	Crude
SFQPLLLNCLWSVSG	1663.94	25ug	Crude
LLLNCLWSVGLRFT	1722.07	25ug	Crude
CLWSVGLRFTTGfV	1672.95	25ug	Crude
VGLRFTTGfVYFNG	1664.87	25ug	Crude
RFTTGfVYFNGTGRG	1679.84	25ug	Crude
GFVYFNGTGRGDCKG	1577.73	25ug	Crude
FNGTGRGDCKGFSSD	1547.61	25ug	Crude
GRGDCKGFSSDVLSD	1542.63	25ug	Crude
CKGFSSDVLSDVIRY	1688.91	25ug	Crude
SSDVLSDVIRYNLNF	1741.90	25ug	Crude
LSDVIRYNLNFEENL	1839.02	25ug	Crude
IRYNLNFEENLRRGT	1895.09	25ug	Crude
LNFEENLRRGTILFK	1850.13	25ug	Crude
ENLRRGTILFKTSYG	1754.99	25ug	Crude
RGTILFKTSYGVVVF	1687.00	25ug	Crude
LFKTSYGVVVFYCTN	1741.02	25ug	Crude
SYGVVVFYCTNNTLV	1678.91	25ug	Crude
VVFYCTNNTLVSGDA	1602.77	25ug	Crude
CTNNTLVSGDAHIPF	1588.75	25ug	Crude
TLVSGDAHIPFGTVL	1526.74	25ug	Crude
GDAHIPFGTVLGNFY	1607.77	25ug	Crude
IPFGTVLGNFYCFVN	1690.97	25ug	Crude
TVLGNFYCFVNTTIG	1648.88	25ug	Crude
NFYCFVNTTIGNETT	1723.87	25ug	Crude
FVNTTIGNETTSAFV	1600.73	25ug	Crude
TIGNETTSAFVGALP	1477.62	25ug	Crude
ETTSAFVGALPKTVR	1576.80	25ug	Crude
AFVGALPKTVREFVI	1646.98	25ug	Crude
ALPKTVREFVISRTG	1673.96	25ug	Crude
TVREFVISRTGHFYI	1825.08	25ug	Crude
FVISRTGHFYINGYR	1830.06	25ug	Crude
RTGHFYINGYRYFTL	1908.13	25ug	Crude
FYINGYRYFTLGNVE	1856.05	25ug	Crude
GYRYFTLGNVEAVNF	1749.93	25ug	Crude
FTLGNVEAVNFNVT	1625.78	25ug	Crude
NVEAVNFNVTTAETT	1609.70	25ug	Crude

VNFNVTTAETTFDCT	1662.78	25ug	Crude
VTTAETTFDCTVALA	1542.71	25ug	Crude
ETTFDCTVALASYAD	1606.71	25ug	Crude
FCTVALASYADVLVN	1585.83	25ug	Crude
ALASYADVLVNVSQT	1550.72	25ug	Crude
YADVLVNVSQTSIAN	1593.74	25ug	Crude
LVNVSQTSIANI IYC	1637.90	25ug	Crude
SQTSIANI IYCNSVI	1625.85	25ug	Crude
IANI IYCNSVINRLR	1762.09	25ug	Crude
IYCNSVINRLRCDQL	1810.12	25ug	Crude
SVINRLRCDQLSFDV	1765.01	25ug	Crude
RLRCDQLSFDVDPGF	1767.97	25ug	Crude
DQLSFDVDPGFYSTS	1677.73	25ug	Crude
FDVDPGFYSTSPIQS	1659.75	25ug	Crude
DGFYSTSPIQSVELP	1639.76	25ug	Crude
STSPIQSVELPVSIV	1555.78	25ug	Crude
IQSVELPVSIVSLPV	1579.88	25ug	Crude
ELPVSIVSLPVYHKH	1718.01	25ug	Crude
SIVSLPVYHKHTFIV	1740.06	25ug	Crude
LPVYHKHTFIVLYVD	1844.17	25ug	Crude
HKHTFIVLYVDFKPQ	1872.18	25ug	Crude
FIVLYVDFKPKQSGGG	1626.86	25ug	Crude
YVDFKPKQSGGGKCFN	1646.83	25ug	Crude
KPKQSGGGKCFNCYPA	1556.77	25ug	Crude
GGGKCFNCYPAGVNI	1499.72	25ug	Crude
CFNCYPAGVNITLAN	1599.84	25ug	Crude
YPAGVNITLANFNET	1623.77	25ug	Crude
VNITLANFNETKGPL	1630.85	25ug	Crude
LANFNETKGPLCVDT	1621.82	25ug	Crude
NETKGPLCVDTSHFT	1648.80	25ug	Crude
GPLCVDTSHFTTKYV	1667.89	25ug	Crude
VDTSHFTTKYVAVYA	1701.88	25ug	Crude
HFTTKYVAVYANVGR	1725.95	25ug	Crude
KYVAVYANVGRWSAS	1670.87	25ug	Crude
VYANVGRWSASINTG	1594.73	25ug	Crude
VGRWSASINTGNCPF	1608.78	25ug	Crude
SASINTGNCPFSFGK	1529.68	25ug	Crude
NTGNCPFSFGKVNNF	1645.80	25ug	Crude
CPFSFGKVNNFVKFG	1690.97	25ug	Crude
FGKVNNFVKFGSVCF	1692.99	25ug	Crude
NNFVKFGSVCFSLKD	1704.95	25ug	Crude
KFGSVCFSLKDIPGG	1554.82	25ug	Crude
VCFSLKDIPGGCAMP	1537.87	25ug	Crude
LKDIPGGCAMPIVAN	1498.82	25ug	Crude
PGGCAMPIVANWAYS	1536.78	25ug	Crude
AMPIVANWAYSKEYT	1778.04	25ug	Crude
VANWAYSKEYTIGSL	1735.94	25ug	Crude
AYSKEYTIGSLYVSW	1801.01	25ug	Crude

YYTIGSLVSWSDGD	1725. 81	25ug	Crude
GSLYVSWSDGDGITG	1513. 57	25ug	Crude
VSWSDGDGITGVPQP	1514. 60	25ug	Crude
DGDGITGVPQPVEGV	1439. 53	25ug	Crude
ITGVPQPVEGVSSFM	1547. 78	25ug	Crude
PQPVEGVSSFMNVTL	1604. 83	25ug	Crude
EGVSSFMNVTLDKCT	1630. 85	25ug	Crude
SFMNVTLDKCTKYNI	1777. 08	25ug	Crude
VTLDKCTKYNIYDVS	1762. 00	25ug	Crude
KCTKYNIYDVSGVGV	1645. 88	25ug	Crude
YNIYDVSGVGVIRVS	1640. 84	25ug	Crude
DVSGVGVIRVSNDF	1564. 70	25ug	Crude
VGVIRVSNDFLNGI	1603. 83	25ug	Crude
RVSNDTFLNGITYTS	1687. 81	25ug	Crude
DTFLNGITYTSTSGN	1590. 65	25ug	Crude
NGITYTSTSGNLLGF	1544. 67	25ug	Crude
YTSTSGNLLGFKDVT	1602. 75	25ug	Crude
SGNLLGFKDVTKGTI	1549. 77	25ug	Crude
LGFKDVTKGTIYSIT	1642. 90	25ug	Crude
DVTKGTIYSITPCNP	1608. 82	25ug	Crude
GTIYSITPCNPPDQL	1618. 81	25ug	Crude
SITPCNPPDQLVYQ	1673. 89	25ug	Crude
CNPPDQLVYQQAVV	1672. 91	25ug	Crude
DQLVYQQAVVGAML	1633. 91	25ug	Crude
VYQQAVVGAMLSNF	1655. 88	25ug	Crude
AVVGAMLSNFYSYG	1545. 72	25ug	Crude
AMLSNFYSYGFSNV	1666. 81	25ug	Crude
ENFYSYGFSNVVELP	1702. 82	25ug	Crude
SYGFSNVVELPKFFY	1797. 02	25ug	Crude
SNVVELPKFFYASNG	1671. 85	25ug	Crude
ELPKFFYASNGTYNC	1753. 94	25ug	Crude
FFYASNGTYNCTDAV	1672. 78	25ug	Crude
SNGTYNCTDAVLTYS	1608. 69	25ug	Crude
YNCTDAVLTYSFVG	1639. 79	25ug	Crude
DAVLTYSFVGVCADG	1504. 62	25ug	Crude
TYSSFGVCADGSI IA	1490. 64	25ug	Crude
FGVCADGSI IAVQPR	1532. 77	25ug	Crude
ADGSI IAVQPRNVSY	1589. 76	25ug	Crude
I IAVQPRNVSYDSVS	1647. 83	25ug	Crude
QPRNVSYDSVSAIVT	1635. 78	25ug	Crude
VSYDSVSAIVTANLS	1525. 66	25ug	Crude
SVSAIVTANLSIPSN	1472. 65	25ug	Crude
IVTANLSIPSNWTTS	1603. 78	25ug	Crude
NLSIPSNWTTSVQVE	1674. 81	25ug	Crude
Subpool 2			
Sequence	MW	Quantity	Purity
KLPYYDVEKIHIIQ	1645. 90	25ug	Crude
PSNWTTSVQVEYLQI	1764. 94	25ug	Crude

TTSVQVEYLQITSTP	1666. 83	25ug	Crude
QVEYLQITSTPIVVD	1704. 92	25ug	Crude
LQITSTPIVDCSTY	1639. 87	25ug	Crude
STPIVDCSTYVCNG	1557. 75	25ug	Crude
VVDCSTYVCNGNVR	1631. 86	25ug	Crude
STYVCNGNVRCELL	1669. 93	25ug	Crude
CNGNVRCELLKQYT	1740. 02	25ug	Crude
VRCVELLKQYTSACK	1741. 09	25ug	Crude
ELLKQYTSACKTIED	1741. 96	25ug	Crude
QYTSACKTIEDALRN	1712. 89	25ug	Crude
ACKTIEDALRNSARL	1660. 90	25ug	Crude
IEDALRNSARLESAD	1659. 76	25ug	Crude
LRNSARLESADVSEM	1677. 84	25ug	Crude
ARLESADVSEMLTFD	1683. 84	25ug	Crude
SADVSEMLTFDKKAF	1688. 90	25ug	Crude
SEMLTFDKKAFTLAN	1715. 97	25ug	Crude
TFDKKAFTLANVSSF	1675. 89	25ug	Crude
KAFTLANVSSFGDYN	1633. 76	25ug	Crude
LANVSSFGDYNLSSV	1572. 68	25ug	Crude
SSFGDYNLSSVIPSL	1585. 72	25ug	Crude
DYNLSSVIPSLPTSG	1549. 68	25ug	Crude
SSVIPSLPTSGSRVA	1457. 64	25ug	Crude
PSLPTSGSRVAGRSA	1442. 58	25ug	Crude
TSGSRVAGRSAIEDI	1518. 64	25ug	Crude
RVAGRSAIEDILFSK	1661. 91	25ug	Crude
RSAIEDILFSKLVTS	1678. 93	25ug	Crude
EDILFSKLVTSGLGT	1579. 80	25ug	Crude
FSKLVTSGLGTVDAD	1509. 66	25ug	Crude
VTSGLGTVDADYKKC	1556. 74	25ug	Crude
LGTVDADYKCKTKGL	1611. 87	25ug	Crude
DADYKCKTKGLSIAD	1627. 82	25ug	Crude
KKCKTKGLSIADLACA	1521. 85	25ug	Crude
KGLSIADLACAQYYN	1629. 84	25ug	Crude
IADLACAQYYNGIMV	1644. 92	25ug	Crude
ACAQYYNGIMVLPGV	1598. 89	25ug	Crude
YYNGIMVLPGVADAE	1611. 82	25ug	Crude
IMVLPGVADAERMAM	1603. 98	25ug	Crude
PGVADAERMAMYTGS	1555. 74	25ug	Crude
DAERMAMYTGSLIGG	1571. 78	25ug	Crude
MAMYTGSLIGGIALG	1454. 76	25ug	Crude
TGSLIGGIALGGLTS	1316. 51	25ug	Crude
IGGIALGGLTSAVSI	1328. 56	25ug	Crude
ALGGLTSAVSIPFSL	1432. 67	25ug	Crude
LTSAVSIPFSLAIQA	1517. 77	25ug	Crude
VSIPFSLAIQARLNY	1691. 98	25ug	Crude
FSLAIQARLNYVALQ	1706. 99	25ug	Crude
IQARLNYVALQTDVL	1716. 98	25ug	Crude
LNYVALQTDVLQENQ	1747. 91	25ug	Crude

ALQTDVLQENQKILA	1683.91	25ug	Crude
DVLQENQKILAASFN	1689.87	25ug	Crude
ENQKILAASFNKAMT	1665.92	25ug	Crude
ILAASFNKAMTNIVD	1607.88	25ug	Crude
SFNKAMTNIVDAFTG	1615.81	25ug	Crude
AMTNIVDAFTGVNDA	1538.69	25ug	Crude
IVDAFTGVNDAITQT	1564.70	25ug	Crude
FTGVNDAITQTSQAL	1565.69	25ug	Crude
NDAITQTSQALQTV	1560.67	25ug	Crude
TQTSQALQTVATALN	1546.69	25ug	Crude
QALQTVATALNKIQD	1613.82	25ug	Crude
TVATALNKIQDVVNQ	1613.82	25ug	Crude
ALNKIQDVVNQQGNS	1627.76	25ug	Crude
IQDVVNQQGNSLNHL	1678.81	25ug	Crude
VNQQGNSLNHLTSQL	1652.77	25ug	Crude
GNSLNHLTSQLRQNF	1728.87	25ug	Crude
NHLTSQLRQNFQAIS	1756.92	25ug	Crude
SQLRQNFQAISSSIQ	1706.86	25ug	Crude
QNFQAISSSIQAID	1684.81	25ug	Crude
AISSSIQAIDYRLDT	1652.81	25ug	Crude
SIQAIDYRLDTIQAD	1721.87	25ug	Crude
IYDRLDTIQADQQVD	1792.91	25ug	Crude
LDTIQADQQVDRLIT	1728.91	25ug	Crude
QADQQVDRLITGRLA	1683.87	25ug	Crude
QVDRLITGRLAALNV	1638.92	25ug	Crude
LITGRLAALNVFVSH	1610.91	25ug	Crude
RLAALNVFVSHLTK	1669.97	25ug	Crude
LVNFVSHLTKYTEV	1751.00	25ug	Crude
VSHLTKYTEVRASR	1747.96	25ug	Crude
LTKYTEVRASRQLAQ	1764.00	25ug	Crude
TEVRASRQLAQQKVN	1727.93	25ug	Crude
ASRQLAQQKVNCEVK	1701.95	25ug	Crude
LAQQKVNCEVKSQSK	1689.94	25ug	Crude
KVNECVKSQSKRYGF	1773.03	25ug	Crude
CVKSQSKRYGFCGNG	1633.86	25ug	Crude
QSKRYGFCGNGTHIF	1714.91	25ug	Crude
YGFCGNGTHIFSVN	1628.81	25ug	Crude
GNGTHIFSVNAAPE	1526.66	25ug	Crude
HIFSVNAAPEGLVF	1613.86	25ug	Crude
IVNAAPEGLVFLHTV	1579.85	25ug	Crude
APEGLVFLHTVLLPT	1606.91	25ug	Crude
LVFLHTVLLPTQYKD	1787.12	25ug	Crude
HTVLLPTQYKDVEAW	1800.03	25ug	Crude
LPTQYKDVEAWSGLC	1709.92	25ug	Crude
YKDVEAWSGLCVDGT	1642.79	25ug	Crude
EAWSGLCVDGTNGYV	1570.69	25ug	Crude
GLCVDGTNGYVLRQP	1591.79	25ug	Crude
DGTNGYVLRQPNLAL	1630.81	25ug	Crude

GYVLRQPNLALYKEG	1720. 97	25ug	Crude
RQPNLALYKEGNYYR	1885. 10	25ug	Crude
LALYKEGNYYRITSR	1847. 09	25ug	Crude
KEGNYYRITSRIMFE	1907. 16	25ug	Crude
YYRITSRIMFEPRIIP	1942. 30	25ug	Crude
TSRIMFEPRIPTMAD	1765. 07	25ug	Crude
MFEPRIPTMADFVQI	1795. 14	25ug	Crude
RIPTMADFVQIENCN	1751. 00	25ug	Crude
MADFVQIENCNVTFV	1729. 98	25ug	Crude
VQIENCNVTFVNISR	1735. 97	25ug	Crude
NCNVTFVNI SRSELQ	1723. 91	25ug	Crude
TFVNI SRSELQTIVP	1703. 94	25ug	Crude
ISRSELQTIVPEYID	1762. 96	25ug	Crude
ELQTIVPEYIDVNKT	1761. 97	25ug	Crude
IVPEYIDVNKTLQEL	1774. 03	25ug	Crude
YIDVNKTLQELSYKL	1827. 09	25ug	Crude
NKTLQELSYKLPNYT	1812. 04	25ug	Crude
QELSYKLPNYTVPDL	1779. 99	25ug	Crude
YKLPNYTVPDLVVEQ	1778. 02	25ug	Crude
NYTVPDLVVEQYNQT	1782. 91	25ug	Crude
PDLVVEQYNQTILNL	1758. 97	25ug	Crude
VEQYNQTILNLTSEI	1764. 94	25ug	Crude
NQTILNLTSEISTLE	1675. 84	25ug	Crude
LNLTSEISTLENKSA	1619. 78	25ug	Crude
SEISTLENKSAELNY	1697. 80	25ug	Crude
TLENKSAELNYTVQK	1737. 91	25ug	Crude
KSAELNYTVQKLQTL	1735. 98	25ug	Crude
LNYTVQKLQTLIDNI	1776. 05	25ug	Crude
VQKLQTLIDNINSTL	1699. 95	25ug	Crude
QTLIDNINSTLVDLK	1686. 91	25ug	Crude
DNINSTLVDLKWLNR	1801. 02	25ug	Crude
STLVDLKWLNRVETY	1837. 09	25ug	Crude
DLKWLNRVETYIKWP	1961. 28	25ug	Crude
LNRVETYIKWPWWVW	2076. 41	25ug	Crude
ETYIKWPWWVWLCIS	2010. 37	25ug	Crude
KWPWWVWLCISVCLI	1928. 40	25ug	Crude
WVWVWVWVWVWVWVW	1763. 20	25ug	Crude
CISVVLIFVVSMLLL	1649. 16	25ug	Crude
VLIFVVSMLLLCCCS	1643. 16	25ug	Crude
VVSMLLLCCSTGCC	1534. 98	25ug	Crude
LLLCCCSGCCGFFS	1556. 92	25ug	Crude
CCSTGCCGFFSCFAS	1522. 78	25ug	Crude
GCCGFFSCFASSIRG	1541. 78	25ug	Crude
FFSCFASSIRGCCES	1643. 87	25ug	Crude
FASSIRGCCESTKLP	1598. 85	25ug	Crude
IRGCCESTKLPYYDV	1747. 01	25ug	Crude
CESTKLPYYDVEKIH	1825. 06	25ug	Crude