

CERTIFICATE OF ANALYSIS

Product Name	SARS-CoV-2 Spike Glycoprotein B.1.1.7-Alpha
Cat No.	RP30025
Lot No	E2564922J
Sequence	See appendix for details
Modification	N/A
Size	Subpool 1: 3.95mg and Subpool 2: 3.925mg
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: *Shanshan Wei*

Date: 10/14/2022

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Appendix:

Subpool 1			
Sequence	MW	Quantity	Purity
MFVFLVLLPLVSSQC	1696.13	25ug	Crude
LVLLPLVSSQCVNLT	1598.95	25ug	Crude
PLVSSQCVNLTRTQ	1646.87	25ug	Crude
SQCVDLTTTRTQLPPA	1628.86	25ug	Crude
NLTRTQLPPAYTNS	1676.83	25ug	Crude
RTQLPPAYTNSFTRG	1708.88	25ug	Crude
PPAYTNSFTRGVVYP	1732.90	25ug	Crude

TNSFTRGVYYPDKVF	1793.98	25ug	Crude
TRGVYYPDKVFRSSV	1773.99	25ug	Crude
YYPDKVFRSSVLHST	1799.00	25ug	Crude
KVFRSSVLHSTQDLF	1764.00	25ug	Crude
SSVLHSTQDLFLPFF	1737.96	25ug	Crude
HSTQDLFLPFFSNVT	1752.93	25ug	Crude
DLFLPFFSNVTFWHA	1841.08	25ug	Crude
PFFSNVTFWHAISGT	1710.89	25ug	Crude
NVTFWHAISGTNGTK	1632.78	25ug	Crude
FHAISGTNGTKRFDN	1664.78	25ug	Crude
SGTNGTKRFDNPVLP	1602.75	25ug	Crude
GTKRFDNPVLPFNDG	1676.83	25ug	Crude
FDNPVLPFNDGVYFA	1714.88	25ug	Crude
VLPFNDGVYFASTEK	1686.87	25ug	Crude
NDGVYFASTEKSNII	1657.78	25ug	Crude
YFASTEKSNIRGWI	1785.02	25ug	Crude
TEKSNIRGWIFGTT	1722.95	25ug	Crude
NIIRGWIFGTTLDSK	1720.97	25ug	Crude
GWIFGTTLDSKTQSL	1653.84	25ug	Crude
GTTLDSKTQSLLIVN	1589.79	25ug	Crude
DSKTQSLLIVNNATN	1617.76	25ug	Crude
QSLLIVNNATNVVIK	1625.92	25ug	Crude
IVNNATNVVIKVCEF	1662.96	25ug	Crude
ATNVVIKVCEFQFCN	1715.01	25ug	Crude
VIKVCEFQFCNDPFL	1802.13	25ug	Crude
CEFQFCNDPFLGVYH	1819.03	25ug	Crude
FCNDPFLGVYHKNNK	1796.02	25ug	Crude
PFLGVYHKNNKSWME	1850.11	25ug	Crude
VYHKNNKSWMESEFR	1955.17	25ug	Crude
NNKSWMESEFRVYSS	1864.01	25ug	Crude
WMESEFRVYSSANNC	1822.98	25ug	Crude
EFVYSSANNCTFEY	1829.95	25ug	Crude
YSSANNCTFEYVSQP	1709.80	25ug	Crude
NNCTFEYVSQPFLMD	1808.01	25ug	Crude
FEYVSQPFLMDLEGK	1803.05	25ug	Crude
SQPFLMDLEGKQGNF	1710.91	25ug	Crude
LMDLEGKQGNFKNLR	1763.04	25ug	Crude
EGKQGNFKNLREFVF	1813.03	25ug	Crude
GNFKNLREFVFNID	1841.08	25ug	Crude
NLREFVFNIDGYFK	1890.15	25ug	Crude
FVFNIDGYFKIYSK	1869.17	25ug	Crude
NIDGYFKIYSKHTPI	1796.04	25ug	Crude

YFKIYSKHTPINLVR	1879.22	25ug	Crude
YSKHTPINLVRDLPQ	1781.03	25ug	Crude
TPINLVRDLPQGFS	1627.85	25ug	Crude
LVRDLPQGFSALEPL	1654.91	25ug	Crude
LPQGFSALEPLVDLP	1595.84	25ug	Crude
FSALEPLVDLPIGIN	1597.86	25ug	Crude
EPLVDLPIGINITRF	1696.99	25ug	Crude
DLPIGINITRFQTL	1714.02	25ug	Crude
GINITRFQTLALHR	1753.07	25ug	Crude
TRFQTLALHRSYLT	1820.11	25ug	Crude
TLLALHRSYLTGDS	1643.85	25ug	Crude
LHRSYLTGDSSSGW	1662.76	25ug	Crude
YLTPGDSSSGWTAGA	1469.51	25ug	Crude
GDSSSGWTAGAAAYY	1463.47	25ug	Crude
SGWTAGAAAYYVGYL	1549.69	25ug	Crude
AGAAAYYVGYLQPR	1600.78	25ug	Crude
AYYVGYLQPRFLLK	1832.16	25ug	Crude
GYLQPRFLLKYNE	1856.09	25ug	Crude
PRTFLLKYNEGTIT	1767.00	25ug	Crude
LLKYNEGTITDAVD	1665.80	25ug	Crude
NENGTITDAVDCAL	1550.61	25ug	Crude
TITDAVDCALDPLSE	1562.70	25ug	Crude
AVDCALDPLSETKCT	1565.77	25ug	Crude
ALDPLSETKCTLKS	1652.91	25ug	Crude
LSETKCTLKSFTVEK	1714.00	25ug	Crude
KCTLKSFTVEKGIYQ	1745.06	25ug	Crude
KSFTVEKGIYQTSNF	1748.94	25ug	Crude
VEKGIYQTSNFRVQP	1765.97	25ug	Crude
IYQTSNFRVQPTE	1782.96	25ug	Crude
SNFRVQPTE	1777.00	25ug	Crude
VQPTE	1714.92	25ug	Crude
ESIVRFPNITNLCPF	1750.04	25ug	Crude
RFPNITNLCPFGEV	1754.03	25ug	Crude
ITNLCPFGEVFNATR	1681.92	25ug	Crude
CPFGEVFNATRFASV	1644.86	25ug	Crude
EVFNATRFASVYAWN	1774.94	25ug	Crude
ATRFASVYAWNRKRI	1839.12	25ug	Crude
ASVYAWNRKRISNCV	1767.03	25ug	Crude
AWNRKRISNCVADYS	1782.99	25ug	Crude
KRISNCVADYSVLYN	1744.97	25ug	Crude
NCVADYSVLYNSASF	1652.79	25ug	Crude
DYSVLYNSASFSTFK	1728.86	25ug	Crude

LYNSASFSTFKCYGV	1686.89	25ug	Crude
ASFSTFKCYGVSPTK	1622.85	25ug	Crude
TFKCYGVSPTKLNDL	1685.95	25ug	Crude
YGVSPTKLNDLCFTN	1671.88	25ug	Crude
PTKLNDLCFTNVYAD	1713.91	25ug	Crude
N DLCFTNVYADSFVI	1720.90	25ug	Crude
FTNVYADSFVIRGDE	1732.85	25ug	Crude
YADSFVIRGDEV RQI	1767.94	25ug	Crude
FVIRGDEV RQIAPGQ	1684.90	25ug	Crude
GDEV RQIAPGQTGKI	1568.74	25ug	Crude
RQIAPGQTGKIADYN	1631.80	25ug	Crude
PGQTGKIADYNYKLP	1664.86	25ug	Crude
GKIADYNYKLPDDFT	1759.92	25ug	Crude
DYNYKLPDDFTGCVI	1762.94	25ug	Crude
KLPDDFTGCVIAWNS	1665.87	25ug	Crude
DFTGCVIAWNSNNLD	1668.79	25ug	Crude
CVIAWNSNNLDSKVG	1619.80	25ug	Crude
WNSNNLDSKVGGNYN	1681.72	25ug	Crude
NLDSKVGGNYNLYR	1775.92	25ug	Crude
KVGGNYNLYRLFRK	1891.19	25ug	Crude
NYNLYRLFRKSNLK	1992.29	25ug	Crude
LYRLFRKSNLKPFER	1967.33	25ug	Crude
FRKSNLKPFERDIST	1838.08	25ug	Crude
NLKPFERDISTEIYQ	1853.05	25ug	Crude
FERDISTEIYQAGST	1716.81	25ug	Crude
ISTEIYQAGSTPCNG	1540.66	25ug	Crude
IYQAGSTPCNGVEGF	1542.68	25ug	Crude
GSTPCNGVEGFNCYF	1594.73	25ug	Crude
CNGVEGFNCYFPLQS	1677.86	25ug	Crude
EGFNCYFPLQSYGFQ	1799.96	25ug	Crude
CYFPLQSYGFQPTYG	1770.97	25ug	Crude
LQSYGFQPTYGVGYQ	1707.84	25ug	Crude
GFQPTYGVGYQP YRV	1731.91	25ug	Crude
TYGVGYQP YRVV VLS	1700.94	25ug	Crude
GYQP YRVV VLSFELL	1783.08	25ug	Crude
YRVV VLSFELLHAPA	1714.02	25ug	Crude
VLSFELLHAPATVCG	1556.83	25ug	Crude
ELLHAPATVCGPKKS	1550.83	25ug	Crude
APATVCGPKKSTNLV	1485.76	25ug	Crude
VCGPKKSTNLVKNKC	1618.97	25ug	Crude
KKSTNLVKNKCVNFN	1737.04	25ug	Crude
NLVKNKCVNFNFNGL	1724.00	25ug	Crude

NKCVNFNFNGLTGTG	1585.75	25ug	Crude
NFNFNGLTGTGVLTE	1583.70	25ug	Crude
NGLTGTGVLTESNKK	1518.68	25ug	Crude
GTGVLTESNKKFLPF	1637.88	25ug	Crude
LTESNKKFLPFQQFG	1784.03	25ug	Crude
NKKFLPFQQFGRDID	1853.09	25ug	Crude
LPFQQFGRDIDDDTTD	1767.85	25ug	Crude
QFGRDIDDDTTDAVRD	1723.76	25ug	Crude
DIDDDTTDAVRDPQTL	1674.73	25ug	Crude
TTDAVRDPQTLLEILD	1686.82	25ug	Crude
VRDPQTLLEILDITPC	1712.97	25ug	Crude
QTLEILDITPCSFEGG	1593.80	25ug	Crude
ILDITPCSFEGGVSVI	1520.80	25ug	Crude
TPCSFEGGVSVITPGT	1422.61	25ug	Crude
FGGVSVITPGTNTSN	1450.56	25ug	Crude
SVITPGTNTSNQVAV	1487.62	25ug	Crude
PGTNTSNQVAVLYQG	1548.66	25ug	Crude
TSNQVAVLYQGVNCT	1596.77	25ug	Crude
VAVLYQGVNCTEVPV	1590.85	25ug	Crude
YQGVNCTEVPVAIHA	1600.80	25ug	Crude
NCTEVPVAIHADQLT	1610.79	25ug	Crude
VPVAIHADQLTPTWR	1703.95	25ug	Crude
IHADQLTPTWRVYST	1787.98	25ug	Crude
QLTPTWRVYSTGSNV	1708.88	25ug	Crude
TWRVYSTGSNVFQTR	1801.96	25ug	Crude
Subpool 2			
Sequence	MW	Quantity	Purity
YSTGSNVFQTRAGCL	1603.76	25ug	Crude
SNVFQTRAGCLIGAE	1565.76	25ug	Crude
QTRAGCLIGAEHVNN	1582.75	25ug	Crude
GCLIGAEHVNNSYEC	1608.76	25ug	Crude
GAEHVNNSYECDIPI	1660.77	25ug	Crude
VNNSYECDIPIGAGI	1564.72	25ug	Crude
YECDIPIGAGICASY	1574.78	25ug	Crude
IPIGAGICASYQTQT	1522.73	25ug	Crude
AGICASYQTQTNSHR	1636.75	25ug	Crude
ASYQTQTNSHRRARS	1762.85	25ug	Crude
TQTNSHRRARSVASQ	1698.81	25ug	Crude
SHRRARSVASQSIIA	1638.84	25ug	Crude
ARSVASQSIIAYTMS	1584.80	25ug	Crude
ASQSIIAYTMSLGAE	1541.73	25ug	Crude
IIAYTMSLGAENVA	1539.76	25ug	Crude

TMSLGAENSVAYSNN	1557.65	25ug	Crude
GAENSVAYSNNNSIAI	1509.58	25ug	Crude
SVAYSNNNSIAIPINF	1609.78	25ug	Crude
NNNSIAIPINFITISV	1589.80	25ug	Crude
IAIPINFITISVTTEI	1631.92	25ug	Crude
INFITISVTTEILPVS	1633.89	25ug	Crude
ISVTTEILPVSMTKT	1619.93	25ug	Crude
TEILPVSMTKTSVDC	1623.90	25ug	Crude
PVSMTKTSVDCTMYI	1675.99	25ug	Crude
TKTSVDCTMYICGDS	1623.83	25ug	Crude
VDCTMYICGDSTECS	1626.81	25ug	Crude
MYICGDSTECSNLLL	1661.92	25ug	Crude
GDSTECSNLLLQYGS	1586.68	25ug	Crude
ECSNLLLQYGSFCTQ	1705.91	25ug	Crude
LLLQYGSFCTQLNRA	1727.00	25ug	Crude
YGSFCTQLNRALTGI	1643.87	25ug	Crude
CTQLNRALTGIAVEQ	1616.85	25ug	Crude
NRALTGIAVEQDKNT	1629.78	25ug	Crude
TGIAVEQDKNTQEVF	1678.80	25ug	Crude
VEQDKNTQEVFAQVK	1762.92	25ug	Crude
KNTQEVFAQVKQIYK	1824.09	25ug	Crude
EVFAQVKQIYKTPPI	1761.08	25ug	Crude
QVKQIYKTPPIKDFG	1762.07	25ug	Crude
IYKTPPIKDFGGFNF	1744.01	25ug	Crude
PPIKDFGGFNFSQIL	1679.92	25ug	Crude
DFGGFNFSQILPDPS	1640.75	25ug	Crude
FNFSQILPDPSKPSK	1704.93	25ug	Crude
QILPDPSKPSKRSFI	1712.99	25ug	Crude
DPSKPSKRSFIEDLL	1731.95	25ug	Crude
PSKRSFIEDLLFNKV	1793.08	25ug	Crude
SFIEDLLFNKVTLAD	1724.96	25ug	Crude
DLLFNKVTLADAGFI	1636.89	25ug	Crude
NKVTLADAGFIKQYG	1624.84	25ug	Crude
LADAGFIKQYGDCLG	1570.77	25ug	Crude
GFIKQYGDCLGDIAA	1570.77	25ug	Crude
QYGDCLGDIAARDLI	1622.81	25ug	Crude
CLGDIAARDLICAQK	1589.89	25ug	Crude
IAARDLICAQKFNGL	1632.93	25ug	Crude
DLICAQKFNGLTVLP	1631.94	25ug	Crude
AQKFNGLTVLPPLLT	1611.93	25ug	Crude
NGLTVLPPLLTDEMI	1625.93	25ug	Crude
VLPPLLTDEMIAQYT	1704.00	25ug	Crude

LLTDEMIAQYTSALL	1681.95	25ug	Crude
EMIAQYTSALLAGTI	1581.84	25ug	Crude
QYTSALLAGTITSGW	1568.73	25ug	Crude
ALLAGTITSGWTFGA	1465.66	25ug	Crude
GTITSGWTFGAGAAL	1409.55	25ug	Crude
SGWTFGAGAALQIPF	1522.71	25ug	Crude
FGAGAALQIPFAMQM	1552.87	25ug	Crude
AALQIPFAMQMAYRF	1758.12	25ug	Crude
IPFAMQMAYRFNGIG	1716.04	25ug	Crude
MQMAYRFNGIGVTQN	1729.99	25ug	Crude
YRFNGIGVTQNVLYE	1772.96	25ug	Crude
GIGVTQNVLYENQKL	1675.89	25ug	Crude
TQNVLYENQKLIANQ	1775.96	25ug	Crude
LYENQKLIANQFNSA	1752.93	25ug	Crude
QKLIANQFNSAIGKI	1644.92	25ug	Crude
ANQFNSAIGKIQDSL	1605.75	25ug	Crude
NSAIGKIQDSLSSSTA	1491.61	25ug	Crude
GKIQDSLSSSTASALG	1434.56	25ug	Crude
DSLSSSTASALGKLQD	1492.59	25ug	Crude
STASALGKLQDVVNQ	1530.69	25ug	Crude
ALGKLQDVVNQNAQA	1568.74	25ug	Crude
LQDVVNQNAQALNTL	1640.80	25ug	Crude
VNQNAQALNTLVKQL	1653.89	25ug	Crude
AQALNTLVKQLSSNF	1633.85	25ug	Crude
NTLVKQLSSNFGAIS	1578.77	25ug	Crude
KQLSSNFGAISSVLN	1564.75	25ug	Crude
SNFGAISSVLNDILA	1520.69	25ug	Crude
AISSVLNDILARLDK	1627.89	25ug	Crude
VLNDILARLDKVEAE	1697.94	25ug	Crude
ILARLDKVEAEVQID	1711.96	25ug	Crude
LDKVEAEVQIDRLIT	1741.99	25ug	Crude
EAEVQIDRLITGRLQ	1740.96	25ug	Crude
QIDRLITGRLQSLQT	1741.99	25ug	Crude
LITGRLQSLQTYVTQ	1720.97	25ug	Crude
RLQSLQTYVTQQLIR	1847.13	25ug	Crude
LQTYVTQQLIRAAEI	1747.01	25ug	Crude
VTQQLIRAAEIRASA	1626.86	25ug	Crude
LIRAAEIRASANLAA	1539.79	25ug	Crude
AEIRASANLAATKMS	1533.76	25ug	Crude
ASANLAATKMSECVL	1508.77	25ug	Crude
LAATKMSECVLGQSK	1565.86	25ug	Crude
KMSECVLGQSKRVDF	1727.02	25ug	Crude

CVLGQSKRVDFCGKG	1596.88	25ug	Crude
QSKRVDFCGKGYHLM	1769.07	25ug	Crude
VDFCGKGYHLSFPQ	1729.00	25ug	Crude
GKGYHLSFPQSAPH	1656.87	25ug	Crude
HLSFPQSAPHGVVF	1653.91	25ug	Crude
FPQSAPHGVVFLHVT	1635.87	25ug	Crude
APHGVVFLHVTYVPA	1606.87	25ug	Crude
VVFLHVTYVPAQEKN	1744.01	25ug	Crude
HVTYVPAQEKNFTTA	1705.87	25ug	Crude
VPAQEKNFTTAPAIC	1589.82	25ug	Crude
EKNFTTAPAICHGDK	1631.82	25ug	Crude
TTAPAICHGKAHFP	1565.76	25ug	Crude
AICHGKAHFPREGV	1636.84	25ug	Crude
DGKAHFPREGVFSN	1659.81	25ug	Crude
HFPREGVFSNGTHW	1769.92	25ug	Crude
EGVFSNGTHWFVTQ	1707.85	25ug	Crude
VSNNGTHWFVTQRNFY	1856.01	25ug	Crude
THWFVTQRNFYEPQI	1966.17	25ug	Crude
VTQRNFYEPQIITTH	1847.04	25ug	Crude
NFYEPQIITHTNFV	1824.01	25ug	Crude
PQIITHTNFVSGNC	1631.82	25ug	Crude
TTHTNFVSGNCDVVI	1606.76	25ug	Crude
TFVSGNCDVIGIVN	1536.76	25ug	Crude
GNCDVIGIVNNTVY	1579.78	25ug	Crude
VVIGIVNNTVYDPLQ	1643.89	25ug	Crude
IVNNTVYDPLQPELD	1729.89	25ug	Crude
TVYDPLQPELDSFKE	1780.93	25ug	Crude
PLQPELDSFKEELDK	1787.97	25ug	Crude
ELDSFKEELDKYFKN	1905.07	25ug	Crude
FKEELDKYFKNHTSP	1883.07	25ug	Crude
LDKYFKNHTSPVDL	1791.96	25ug	Crude
FKNHTSPVDLGDIS	1644.74	25ug	Crude
TSPVDLGDISGINA	1473.55	25ug	Crude
VDLGDISGINASVVN	1472.60	25ug	Crude
DISGINASVNIQKE	1586.75	25ug	Crude
INASVNIQKEIDRL	1711.97	25ug	Crude
VVNIQKEIDRLNEVA	1739.98	25ug	Crude
QKEIDRLNEVAKNLN	1783.99	25ug	Crude
DRLNEVAKNLNESLI	1727.92	25ug	Crude
EVAKNLNESLIDLQE	1714.88	25ug	Crude
NLNESLIDLQELGKY	1748.94	25ug	Crude
SLIDLQELGKYEQYI	1812.03	25ug	Crude

LQELGKYEQYIKWPW	1981.26	25ug	Crude
GKYEQYIKWPWYIWL	2073.40	25ug	Crude
QYIKWPWYIWLGFIA	1984.35	25ug	Crude
WPWYIWLGFIAGLIA	1806.16	25ug	Crude
IWLGFIAGLIAIVMV	1616.07	25ug	Crude
FIAGLIAIVMVTIML	1605.11	25ug	Crude
LIAIVMVTIMLCCMT	1655.24	25ug	Crude
VMVTIMLCCMTSCCS	1625.13	25ug	Crude
IMLCCMTSCCSCLKG	1596.09	25ug	Crude
CMTSCCSCLKGCCSC	1531.94	25ug	Crude
CCSCLKGCCSCGCC	1459.83	25ug	Crude
LKGCCSCGSCCKFDE	1582.87	25ug	Crude
CSCGSCCKFDEDDSE	1627.72	25ug	Crude
SCCKFDEDDSEPVLK	1714.88	25ug	Crude
FDEDDSEPVLKGVKL	1690.85	25ug	Crude
DSEPVLKGVKLHYT	1585.81	25ug	Crude