

CERTIFICATE OF ANALYSIS

Product Name	SARS-CoV-2 Spike Glycoprotein-Omicron-90% purity
Cat No.	RP30219
Lot No	E9155622I
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: *Tingting Cai*

Date: 09/10/2022

Appendix:

Subpool 1			
Sequence	MW	Quantity	Purity
MFVFLVLLPLVSSQC	1696.13	25ug	95.0%
LVLLPLVSSQCVNLT	1598.95	25ug	93.9%
PLVSSQCVNLTTTRTQ	1646.87	25ug	92.8%
SQCVNLTTTRTQLPPA	1628.86	25ug	96.1%
NLTTTRTQLPPAYTNS	1676.83	25ug	96.8%
RTQLPPAYTNSFTRG	1708.88	25ug	93.9%
PPAYTNSFTRGVYYP	1732.90	25ug	90.9%
TNSFTRGVYYPDKVF	1793.98	25ug	93.1%
TRGVYYPDKVFRSSV	1773.99	25ug	91.2%
YYPDKVFRSSVLHST	1799.00	25ug	94.6%
KVFRSSVLHSTQDLF	1764.00	25ug	98.7%
SSVLHSTQDLFLPFF	1737.96	25ug	95.9%
HSTQDLFLPFFSNVT	1752.93	25ug	96.4%

DLFLPFFSNVTWFHV	1869.13	25ug	91.3%
PFFSNVTWFHVISGT	1738.95	25ug	94.6%
NVTWFHVISGTNGTK	1660.84	25ug	94.4%
FHVISGTNGTKRFDN	1692.84	25ug	92.8%
SGTNGTKRFDNPVLP	1602.75	25ug	90.1%
GTKRFDNPVLPFNDG	1676.84	25ug	97.8%
FDNPVLPFNDGVYFA	1714.88	25ug	96.8%
VLPFNDGVYFASIEK	1698.92	25ug	91.2%
NDGVYFASIEKSNI	1669.84	25ug	92.5%
YFASIEKSNIIRGWI	1797.07	25ug	90.1%
IEKSNIIRGWIFGTT	1735.00	25ug	90.1%
NIIRGWIFGTTLDSK	1720.97	25ug	93.3%
GWIFGTTLDSKTQSL	1653.84	25ug	90.1%
GTTLDSKTQSLLIVN	1589.79	25ug	91.9%
DSKTQSLLIVNNATN	1617.76	25ug	90.1%
QSLLIVNNATNVVIK	1625.92	25ug	96.1%
IVNNATNVVIKVCEF	1662.96	25ug	91.5%
ATNVVIKVCEFQFCN	1715.01	25ug	90.1%
VIKVCEFQFCNDPFL	1802.13	25ug	92.3%
CEFQFCNDPFLDHKN	1857.04	25ug	93.9%
FCNDPFLDHKNKSW	1865.04	25ug	94.6%
PFLDHKNKSWMESE	1862.04	25ug	90.3%
HKNNKSWMESEFRVY	1955.17	25ug	91.8%
KSWMESEFRVYSSAN	1820.98	25ug	90.8%
ESEFRVYSSANNCTF	1753.85	25ug	92.8%
RVYSSANNCTFEYVS	1739.87	25ug	93.9%
SANNCTFEYVSQPFL	1719.88	25ug	93.9%
CTFEYVSQPFLMDLE	1822.07	25ug	92.3%
YVSQPFLMDLEGKQG	1711.94	25ug	95.6%
PFLMDLEGKQGNFKN	1737.98	25ug	95.0%
DLEGKQGNFKNLREF	1794.97	25ug	97.6%
KQGNFKNLREFVFKN	1869.14	25ug	94.6%
FKNLREFVFKNIDGY	1890.15	25ug	91.5%
REFVFKNIDGYFKIY	1939.23	25ug	95.1%
FKNIDGYFKIYSKHT	1861.11	25ug	93.5%
DGYFKIYSKHTPIIV	1781.07	25ug	97.7%
KIYSKHTPIIVREPE	1810.11	25ug	90.1%
KHTPIIVREPEDLPQ	1772.02	25ug	96.5%
IIVREPEDLPQGFSA	1670.87	25ug	92.8%
EPEDLPQGFSALEPL	1641.78	25ug	91.7%
LPQGFSALEPLVDLP	1595.84	25ug	95.5%
FSALEPLVDLPIGIN	1597.86	25ug	91.6%
EPLVDLPIGINITRF	1696.99	25ug	90.3%
DLPIGINITRFQTL	1714.02	25ug	94.4%
GINITRFQTLALHR	1753.07	25ug	94.0%

TRFQTLALHRSYLT	1820.11	25ug	92.4%
TLLALHRSYLTPGDS	1643.85	25ug	91.7%
LHRSYLTPGDSSSGW	1662.77	25ug	94.6%
YLTPGDSSSGWTAGA	1469.52	25ug	93.9%
GDSSSGWTAGAAAYY	1463.47	25ug	92.3%
SGWTAGAAAYYVGYL	1549.69	25ug	94.6%
AGAAAYYVGYLQPR	1600.78	25ug	93.1%
AYYVGYLQPRFLK	1832.16	25ug	91.4%
GYLQPRFLKYNEN	1856.09	25ug	92.3%
PRTFLKYNENGTIT	1767.00	25ug	92.8%
LLKYNENGTITDAVD	1665.80	25ug	90.2%
NENGTITDAVDCALD	1550.61	25ug	91.3%
TITDAVDCALDPLSE	1562.70	25ug	90.1%
AVDCALDPLSETKCT	1565.77	25ug	92.8%
ALDPLSETKCTLSF	1652.92	25ug	91.4%
LSETKCTLSFTVEK	1714.00	25ug	91.4%
KCTLSFTVEKGIYQ	1745.06	25ug	90.8%
KSFTVEKGIYQTSNF	1748.94	25ug	97.1%
VEKGIYQTSNFRVQP	1765.97	25ug	93.9%
IYQTSNFRVQPTESI	1782.96	25ug	91.0%
SNFRVQPTESIVRFP	1777.00	25ug	92.7%
VQPTESIVRFPNITN	1714.92	25ug	91.5%
ESIVRFPNITNLCPF	1750.04	25ug	90.4%
RFPNITNLCPFDEVF	1812.06	25ug	94.6%
ITNLCPFDEVFNATR	1739.95	25ug	93.3%
CPFDEVFNATRFASV	1702.89	25ug	94.4%
EVFNATRFASVYAWN	1774.94	25ug	90.7%
ATRFASVYAWNRKRI	1839.12	25ug	95.7%
ASVYAWNRKRISNCV	1767.03	25ug	93.9%
AWNRKRISNCVADYS	1782.99	25ug	98.8%
KRISNCVADYSVLYN	1744.97	25ug	90.6%
NCVADYSVLYNLAPF	1688.91	25ug	92.8%
DYSVLYNLAPFFTFK	1825.08	25ug	99.1%
LYNLAPFFTFKCYGV	1783.11	25ug	92.6%
APFFTFKCYGVSPTK	1692.98	25ug	93.9%
TFKCYGVSPTKLNDL	1685.95	25ug	94.6%
YGVSPKLNLCFTN	1671.88	25ug	91.6%
PTKLNLCFTNVYAD	1713.91	25ug	92.3%
NLCFTNVYADSFVI	1720.90	25ug	94.6%
FTNVYADSFVIRGDE	1732.85	25ug	95.2%
YADSFVIRGDEVRQI	1767.94	25ug	92.4%
FVIRGDEVRQIAPGQ	1684.90	25ug	92.0%
GDEVRQIAPGQTGNI	1554.67	25ug	96.2%
RQIAPGQTGNIADYN	1617.73	25ug	92.8%
PGQTGNIADYNYKLP	1650.79	25ug	93.9%

GNIADYNYKLPDDFT	1745.85	25ug	96.7%
DYNYKLPDDFTGCVI	1762.94	25ug	94.4%
KLPDDFTGCVIAWNS	1665.87	25ug	92.3%
DFTGCVIAWNSNKLD	1682.86	25ug	94.6%
CVIAWNSNKLDSKVS	1663.90	25ug	92.3%
WNSNKLDSKVSGNYN	1725.82	25ug	95.1%
KLDSKVSGNYNYLYR	1820.02	25ug	94.6%
KVSGNYNYLYRLFRK	1921.21	25ug	98.1%
NYNYLYRLFRKSNLK	1992.29	25ug	98.6%
LYRLFRKSNLKPFR	1967.33	25ug	93.9%
FRKSNLKPFRDIST	1838.08	25ug	90.1%
NLKPFRDISTEIYQ	1853.05	25ug	93.6%
FERDISTEIYQAGNK	1770.90	25ug	94.4%
ISTEIYQAGNKPCNG	1594.75	25ug	91.3%
IYQAGNKPCNGVAGF	1538.73	25ug	95.0%
GNKPCNGVAGFNCYF	1590.79	25ug	94.0%
CNGVAGFNCYFPLRS	1647.88	25ug	96.1%
AGFNCYFPLRSYSFR	1828.07	25ug	97.2%
CYFPLRSYSFRPTYG	1857.10	25ug	90.6%
LRSYSFRPTYGVGHQ	1767.95	25ug	98.2%
SFRPTYGVGHQPYRV	1763.96	25ug	93.0%
TYGVGHQPYRVVLS	1674.91	25ug	91.8%
GHQPYRVVLSFELL	1757.05	25ug	96.4%
YRVVLSFELLHAPA	1714.02	25ug	90.1%
VLSFELLHAPATVCG	1556.83	25ug	92.8%
ELLHAPATVCGPKKS	1550.83	25ug	93.9%
APATVCGPKKSTNLV	1485.76	25ug	95.6%
VCGPKKSTNLVKNKC	1618.97	25ug	94.6%
KKSTNLVKNKCVNFN	1737.04	25ug	94.6%
NLVKNKCVNFNFNGL	1724.00	25ug	90.3%
NKCVNFNFNGLKGTG	1612.82	25ug	97.1%
NFNFNGLKGTGVLTE	1610.77	25ug	90.2%
NGLKGTGVLTESNKK	1545.74	25ug	91.4%
GTGVLTESNKKFLPF	1637.88	25ug	99.0%
LTESNKKFLPFQQFG	1784.03	25ug	90.4%
NKKFLPFQQFGRDIA	1809.08	25ug	94.6%
LPFQQFGRDIADTTD	1723.85	25ug	90.3%
QFGRDIADTTDAVRD	1679.75	25ug	93.9%
DIADTTDAVRDPQTL	1630.72	25ug	92.8%
TTDAVRDPQTLTILD	1686.82	25ug	97.0%
VRDPQTLTILDITPC	1712.97	25ug	95.7%
QTLTILDITPCSFEGG	1593.80	25ug	92.9%
ILDITPCSFEGGVSVI	1520.80	25ug	95.0%
TPCSFEGGVSIVITPGT	1422.61	25ug	94.6%
FGGVSIVITPGTNTSN	1450.56	25ug	91.5%

SVITPGTNTSNQVAV	1487.62	25ug	90.1%
PGTNTSNQVAVLYQG	1548.66	25ug	91.1%
TSNQVAVLYQGVNCT	1596.77	25ug	93.6%
VAVLYQGVNCTEVPV	1590.85	25ug	90.7%
YQGVNCTEVPVAIHA	1600.80	25ug	94.4%
NCTEVPVAIHADQLT	1610.80	25ug	94.6%
VPVAIHADQLTPTWR	1703.95	25ug	93.6%
IHADQLTPTWRVYST	1787.98	25ug	91.8%
QLTPTWRVYSTGSNV	1708.88	25ug	90.2%
TWRVYSTGSNVFQTR	1801.96	25ug	91.3%
Subpool 2			
Sequence	MW	Quantity	Purity
YSTGSNVFQTRAGCL	1603.76	25ug	93.4%
SNVFQTRAGCLIGAE	1565.76	25ug	90.6%
QTRAGCLIGAEYVNN	1608.78	25ug	91.0%
GCLIGAEYVNNSEYEC	1634.79	25ug	92.1%
GAEYVNNSEYECDIPI	1686.80	25ug	95.3%
VNNSEYECDIPIGAGI	1564.72	25ug	90.4%
YECDIPIGAGICASY	1574.78	25ug	93.9%
IPIGAGICASYQTQT	1522.73	25ug	97.3%
AGICASYQTQTKSHR	1650.82	25ug	94.2%
ASYQTQTKSHRRARS	1776.92	25ug	92.3%
TQTKSHRRARSVASQ	1712.88	25ug	97.4%
SHRRARSVASQSIIA	1638.84	25ug	92.8%
ARSVASQSIIAYTMS	1584.80	25ug	91.5%
ASQSIIAYTMSLGAE	1541.73	25ug	91.0%
IIAYTMSLGAENSVA	1539.76	25ug	91.5%
TMSLGAENSVAYSNN	1557.65	25ug	94.6%
GAENSVAYSNNNSIAI	1509.58	25ug	93.9%
SVAYSNNNSIAIPTNF	1597.73	25ug	92.3%
SNNSIAIPTNFTISV	1577.74	25ug	92.3%
IAIPTNFTISVTTEI	1619.86	25ug	93.3%
TNFTISVTTEILPVS	1621.83	25ug	95.2%
ISVTTEILPVSMTKT	1619.93	25ug	91.9%
TEILPVSMTKTSVDC	1623.90	25ug	90.3%
PVSMTKTSVDCTMYI	1675.99	25ug	91.3%
TKTSVDCTMYICGDS	1623.83	25ug	90.5%
VDCTMYICGDSTEC	1626.81	25ug	93.5%
MYICGDSTECNLLL	1661.92	25ug	94.6%
GDSTECNLLLQYGS	1586.68	25ug	92.8%
ECSNLLLQYGSFCTQ	1705.92	25ug	94.4%
LLLQYGSFCTQLKRA	1741.07	25ug	92.3%
YGSFCTQLKRALTGI	1657.94	25ug	93.6%
CTQLKRALTGIAVEQ	1630.92	25ug	97.5%
KRALTGIAVEQDKNT	1643.85	25ug	93.9%

TGIAVEQDKNTQEVEF	1678.80	25ug	94.6%
VEQDKNTQEVEFAQVK	1762.92	25ug	95.8%
KNTQEVEFAQVKQIYK	1824.09	25ug	91.5%
EVFAQVKQIYKTPPI	1761.08	25ug	90.9%
QVKQIYKTPPIKYFG	1810.15	25ug	94.2%
IYKTPPIKYFGGFNF	1792.09	25ug	91.4%
PPIKYFGGFNFSQIL	1728.01	25ug	92.8%
YFGGFNFSQILPDPS	1688.84	25ug	93.9%
FNFSQILPDPSKPSK	1704.93	25ug	90.6%
QILPDPSKPSKRSFI	1713.00	25ug	90.4%
DPSKPSKRSFIEDLL	1731.95	25ug	97.0%
PSKRSFIEDLLFNKV	1793.08	25ug	96.2%
SFIEDLLFNKVTLAD	1724.96	25ug	90.1%
DLLFNKVTLADAGFI	1636.89	25ug	93.9%
NKVTLADAGFIKQYG	1624.84	25ug	94.6%
LADAGFIKQYGDCLG	1570.77	25ug	95.2%
GFIKQYGDCLGDIAA	1570.77	25ug	92.1%
QYGDCLGDIAARDLI	1622.81	25ug	94.4%
CLGDIAARDLICAQK	1589.89	25ug	93.9%
IAARDLICAQKFKGL	1647.00	25ug	94.6%
DLICAQKFKGLTVLP	1646.01	25ug	96.4%
AQKFKGLTVLPPLLT	1626.00	25ug	95.0%
KGLTVLPPLLTDEMI	1640.00	25ug	92.2%
VLPPLLTDEMIAQYT	1704.00	25ug	92.4%
LLTDEMIAQYTSALL	1681.95	25ug	92.3%
EMIAQYTSALLAGTI	1581.84	25ug	92.8%
QYTSALLAGTITSGW	1568.73	25ug	93.1%
ALLAGTITSGWTFGA	1465.66	25ug	94.3%
GTITSGWTFGAGAAL	1409.55	25ug	93.9%
SGWTFGAGAALQIPF	1522.71	25ug	93.7%
FGAGAALQIPFAMQM	1552.87	25ug	91.9%
AALQIPFAMQMAYRF	1758.12	25ug	92.3%
IPFAMQMAYRFNGIG	1716.04	25ug	91.4%
MQMAYRFNGIGVTQN	1729.99	25ug	92.8%
YRFNGIGVTQNVLYE	1772.96	25ug	91.6%
GIGVTQNVLYENQKL	1675.89	25ug	93.9%
TQNVLYENQKLIANQ	1775.96	25ug	94.4%
LYENQKLIANQFNSA	1752.93	25ug	94.6%
QKLIANQFNSAIGKI	1644.92	25ug	91.5%
ANQFNSAIGKIQDSL	1605.76	25ug	93.9%
NSAIGKIQDLSSTA	1491.61	25ug	91.6%
GKIQDLSSTASALG	1434.56	25ug	94.4%
DSLSTASALGKLQD	1492.59	25ug	95.8%
STASALGKLQDVVNH	1539.70	25ug	96.0%
ALGKLQDVVNHNAQA	1577.75	25ug	96.6%

LQDVVNHNAQALNTL	1649.81	25ug	95.6%
VNHNAQALNTLVKQL	1662.90	25ug	92.9%
AQALNTLVKQLSSKF	1647.92	25ug	96.0%
NTLVKQLSSKFGAIS	1592.84	25ug	90.8%
KQLSSKFGAISSVLN	1578.82	25ug	91.2%
SKFGAISSVLNDIFS	1584.78	25ug	90.1%
AISSVLNDIFSRLDK	1677.90	25ug	96.6%
VLNDIFSRLDKVEAE	1747.95	25ug	94.7%
IFSRLDKVEAEVQID	1761.98	25ug	92.7%
LDKVEAEVQIDRLIT	1741.99	25ug	93.9%
EAEVQIDRLITGRLQ	1740.96	25ug	93.9%
QIDRLITGRLQSLQT	1741.99	25ug	92.8%
LITGRLQSLQTYVTQ	1720.97	25ug	90.4%
RLQSLQTYVTQQLIR	1847.13	25ug	94.3%
LQTYVTQQLIRAAEI	1747.01	25ug	90.9%
VTQQLIRAAEIRASA	1626.86	25ug	94.6%
LIRAAEIRASANLAA	1539.79	25ug	93.5%
AEIRASANLAATKMS	1533.76	25ug	92.3%
ASANLAATKMSECVL	1508.77	25ug	91.5%
LAATKMSECVLGQSK	1565.86	25ug	94.1%
KMSECVLGQSKRVDF	1727.02	25ug	94.4%
CVLGQSKRVDFCGKG	1596.88	25ug	92.8%
QSKRVDFCGKGYHLM	1769.07	25ug	90.6%
VDFCGKGYHLMSFPQ	1729.00	25ug	90.0%
GKGYHLMSFPQSAPH	1656.87	25ug	94.9%
HLMSFPQSAPHGVVF	1653.91	25ug	96.5%
FPQSAPHGVVFLHVT	1635.87	25ug	92.8%
APHGVVFLHVTVVPA	1606.87	25ug	93.9%
VVFLHVTVVPAQEKN	1744.01	25ug	96.0%
HVTYVPAQEKNFTTA	1705.87	25ug	93.9%
VPAQEKNFTTAPAIC	1589.82	25ug	93.8%
EKNFTTAPAICHDGK	1631.82	25ug	90.0%
TTAPAICHDGKAHFP	1565.76	25ug	91.3%
AICHDGKAHFREGV	1636.84	25ug	91.6%
DGKAHFREGVFVSN	1659.81	25ug	95.7%
HFPREGVFVSNGTHW	1769.92	25ug	94.6%
EGVFVSNGTHWFVTQ	1707.85	25ug	91.4%
VSNGTHWFVTQRNFY	1856.01	25ug	98.8%
THWFVTQRNFYEPQI	1966.17	25ug	91.5%
VTQRNFYEPQIITTD	1824.99	25ug	94.3%
NFYEPQIITTDNTFV	1801.95	25ug	91.8%
PQIITTDNTFVSGNC	1609.76	25ug	92.8%
TTDNTFVSGNCDVVI	1584.71	25ug	93.9%
TFVSGNCDVVIGIVN	1536.76	25ug	96.9%
GNCDVVIGIVNNTVY	1579.78	25ug	90.6%

VVIGIVNNTVYDPLQ	1643.89	25ug	94.1%
IVNNTVYDPLQPELD	1729.89	25ug	94.9%
TVYDPLQPELDSFKE	1780.93	25ug	90.5%
PLQPELDSFKEELDK	1787.97	25ug	94.6%
ELDSFKEELDKYFKN	1905.07	25ug	96.3%
FKEELDKYFKNHTSP	1883.07	25ug	91.3%
LDKYFKNHTSPDVDL	1791.96	25ug	93.9%
FKNHTSPDVDLGDIS	1644.75	25ug	93.8%
TSPDVDLGDISGINA	1473.55	25ug	93.1%
VDLGDISGINASVVN	1472.60	25ug	94.6%
DISGINASVVNIQKE	1586.75	25ug	92.9%
INASVVNIQKEIDRL	1711.97	25ug	91.4%
VVNIQKEIDRLNEVA	1739.98	25ug	90.4%
QKEIDRLNEVAKNLN	1783.99	25ug	94.4%
DRLNEVAKNLNESLI	1727.92	25ug	96.2%
EVAKNLNESLIDLQE	1714.88	25ug	94.6%
NLNESLIDLQELGKY	1748.94	25ug	93.0%
SLIDLQELGKYEQYI	1812.03	25ug	92.8%
LQELGKYEQYIKWPW	1981.26	25ug	91.1%
GKYEQYIKWPWYIWL	2073.40	25ug	94.1%
QYIKWPWYIWLGFIA	1984.35	25ug	93.9%
WPWYIWLGFIAGLIA	1806.16	25ug	90.1%
IWLGFIAGLIAIVMV	1616.07	25ug	90.4%
FIAGLIAIVMVTIML	1605.11	25ug	95.3%
LIAIVMVTIMLCCMT	1655.24	25ug	91.3%
VMVTIMLCCMTSCCS	1625.13	25ug	90.1%
IMLCCMTSCCSCLKG	1596.09	25ug	96.7%
CMTSCCSCLKGCCSC	1531.94	25ug	90.4%
CCSCLKGCCSCGSCC	1459.83	25ug	91.7%
LKGCCSCGSCCKFDE	1582.87	25ug	92.8%
CSCGSCCKFDEDDSE	1627.72	25ug	92.6%
SCCKFDEDDSEPVLK	1714.88	25ug	94.6%
FDEDDSEPVLKGVKL	1690.85	25ug	93.9%
DSEPVLKGVKLHYT	1585.81	25ug	94.7%