GENOMIC DNA OF HLA-A*24:02:01:01

FIG. 1A

```
      -291       -281       -271       -261       -251       -241       -231       -221       -211       -201
CAGAAGCAGA GGGGTCAGGG CGAAGTCCCA GGGCCCCAGG CGTGGCTCTC AGGGTCTCAG GCCCCGAAGG CGGTGTATGG ATTGGGGAGT CCCAGCCTTG
      -191       -181       -171       -161       -151       -141       -131       -121       -111       -101
GGGATTCCCC AACTCCGCAG TTTCTTTTCT CCCTCTCCCA ACCTATGTAG GGTCCTTCTT CCTGGATACT CACGACGCGG ACCCAGTTCT CACTCCCATT
       -91        -81        -71        -61        -51        -41        -31        -21        -11         -1
GGGTGTCGGG TTTCCAGAGA AGCCAATCAG TGTCGTCGCG GTCGCTGTTC TAAAGTCCGC ACGCACCCAC CGGGACTCAG ATTCTCCCCA GACGCCGAGG
        10         20         30         40         50         60         70         80         90        100
ATGGCCGTCA TGGCGCCCCG AACCCTCGTC CTGCTACTCT CGGGGGCCCT GGCCCTGACC CAGACCTGGG CAG GTGAGTG CGGGGTCGGG AGGGAAACGG
       110        120        130        140        150        160        170        180        190        200
CCTCTGCGGG GAGAAGCAAG GGGCCCGCCT GGCGGGGGCG CAAGACCCGG GAAGCCGCGC CGGGAGGAGG GTCGGGCGGG TCTCAGCCAC TCCTCGTCCC
       210        220        230        240        250        260        270        280        290        300
CAG GCTCCCA CTCCATGAGG TATTTCTCCA CATCCGTGTC CCGGCCCGGC CGCGGGGAGC CCCGCTTCAT CGCCGTGGGC TACGTGGACG ACACGCAGTT
       310        320        330        340        350        360        370        380        390        400
CGTGCGGTTC GACAGCGACG CCGCGAGCCA GAGGATGGAG CCGCGGGCGC CGTGGATAGA GCAGGAGGGG CCGGAGTATT GGGACGAGGA GACAGGGAAA
       410        420        430        440        450        460        470        480        490        500
GTGAAGGCCC ACTCACAGAC TGACCGAGAG AACCTGCGGA TCGCGCTCCG CTACTACAAC CAGAGCGAGG CCG GTGAGTG ACCCCGGCCC GGGGCGCAGG
       510        520        530        540        550        560        570        580        590        600
TCACGACCCC TCATCCCCCA CGGACGGGCC GGGTCGCCCA CAGTCTCCGG GTCCGAGATC CACCCCGAAG CCGCGGGACC CCGAGACCCT TGCCCCGGGA
```

TO FIG. 1B

FIG. 1B

610	620	630	640	650	660	670	680	690	700
GAGGCCCAGG	CGCCTTAACC	CGGTTTCATT	TTCAGTTTAG	GCCAAAAATC	CCCCCGGGTT	GGTCGGGGCC	GGGCGGGGCT	CGGGGGACTG	GGCTGACCGC
710	720	730	740	750	760	770	780	790	800
GGGGTCGGGG	CCAG|GTTCTC	ACACCCTCCA	GATGATGTTT	GGCTGCGACG	TGGGGTCGGA	CGGGCGCTTC	CTCCGCGGGT	ACCACCAGTA	CGCCTACGAC
810	820	830	840	850	860	870	880	890	900
GGCAAGGATT	ACATCGCCCT	GAAAGAGGAC	CTGCGCTCTT	GGACCGCGGC	GGACATGGCG	GCTCAGATCA	CCAAGCGCAA	GTGGGAGGCG	GCCCATGTGG
910	920	930	940	950	960	970	980	990	1000
CGGAGCAGCA	GAGAGCCTAC	CTGGAGGGCA	CGTGCGTGGA	CGGGCTCCGC	AGATACCTGG	AGAACGGGAA	GGAGACGCTG	CAGCGCACGG|	GTACCAGGGG
1010	1020	1030	1040	1050	1060	1070	1080	1090	1100
CCACGGGGCG	CCTACCTGAT	CGCCTGTAGG	TCTCCCGGGC	TGGCCTCCCA	CAAGGAGGGG	AGACAATTGG	GACCAACACT	AGAATATCGC	CCTCCCTCTG
1110	1120	1130	1140	1150	1160	1170	1180	1190	1200
GTCCTGAGGG	AGAGGAATCC	TCCTGGGTTT	CCAGATCCTG	TACCAGAGAG	TGACTCTGAG	GTTCCGCCCT	GCTCTCTGAC	ACAATTAAGG	GATAAAATCT
1210	1220	1230	1240	1250	1260	1270	1280	1290	1300
CTGACGGAAT	GACGGAAAGA	CGATCCCTCG	AATACTGATG	ACTGGTTCCC	TTTGACACCG	GCAGCAGCCT	TGGGACCGTG	ACTTTTCCTC	TCAGGCCTTG
1310	1320	1330	1340	1350	1360	1370	1380	1390	1400
TTCTCTGCTT	CACACTCAAT	GTGTGTGGGG	GTCTGAGTCC	AGCACTTCTG	AGTCCCTCAG	CCTCCACTCA	GGTCAGGACC	AGAAGTCGCT	GTTCCCTCCT
1410	1420	1430	1440	1450	1460	1470	1480	1490	1500
CAGGGAATAG	AAGATTATCC	CAGGTGCCTG	TGTCCAGGCT	GGTGTCTGGG	TTCTGTGCTC	TCTTCCCCAT	CCCGGGTGTC	CTGTCCATTC	TCAAGATGGC

TO FIG. 1C

FIG. 1C

1510 1520 1530 1540 1550 1560 1570 1580 1590 1600

CACATGCATG CTGGTGGAGT GTCCCATGAC AGATGCAAAA TGCCTGAATT TTCTGACTCT TCCCGTCAG|A CCCCCCCAAG ACACATATGA CCCACCACCC

1610 1620 1630 1640 1650 1660 1670 1680 1690 1700

CATCTCTGAC CATGAGGCCA CTCTGAGATG CTGGGCCCTG GGCTTCTACC CTGCGGAGAT CACACTGACC TGGCAGCGGG ATGGGGAGGA CCAGACCCAG

1710 1720 1730 1740 1750 1760 1770 1780 1790 1800

GACACGGAGC TTGTGGAGAC CAGGCCTGCA GGGGATGGAA CCTTCCAGAA GTGGGCAGCT GTGGTGGTAC CTTCTGGAGA GGAGCAGAGA TACACCTGCC

1810 1820 1830 1840 1850 1860 1870 1880 1890 1900

ATGTGCAGCA TGAGGGTCTG CCCAAGCCCC TCACCCTGAG ATGGG|GTAAG GAGGGAGATG GGGGTGTCAT GTCTCTTAGG GAAAGCAGGA GCCTCTCTGG

1910 1920 1930 1940 1950 1960 1970 1980 1990 2000

AGACCTTTAG CAGGGTCAGG GCCCCTCACC TTCCCCTCTT TTCCCAG|AGC CATCTTCCCA GCCCACCGTC CCCATCGTGG GCATCATTGC TGGCCTGGTT

2010 2020 2030 2040 2050 2060 2070 2080 2090 2100

CTCCTTGGAG CTGTGATCAC TGGAGCTGTG GTCGCTGCTG TGATGTGGAG GAGGAACAGC TCAG|GTGGAG AAGGGGTGAA GGGTGGGGTC TGAGATTTCT

2110 2120 2130 2140 2150 2160 2170 2180 2190 2200

TGTCTCACTG AGGGTTCCAA GCCCCAGCTA GAAATGTGCC CTGTCTCATT ACTGGGAAGC ACCATCCACA ATCATGGGCC GACCCAGCCT GGGCCCTGTG

2210 2220 2230 2240 2250 2260 2270 2280 2290 2300

TGCCAGCACT TACTCTTTTG TAAAGCACCT GTGACAATGA AGGACAGATT TATCACCTTG ATTATGGCGG TGATGGGACC TGATCCCAGC AGTCACAAGT

2310 2320 2330 2340 2350 2360 2370 2380 2390 2400

CACAGGGGAA GGTCCCTGAC GACAGATCTC AGGAGGGCGA TTGGTCCAGG GCCCACATCT GCTTTCTTCA TGTTTCCTGA TCCTGCCCTG GGTCTGCAGT

TO FIG. 1D

FIG. 1D

2410 2420 2430 2440 2450 2460 2470 2480 2490 2500

CACACATTTC TGGAAACTTC TCTGGGGTCC AAGACTAGGA GGTTCCTCTA GGACCTTAAG GCCCTGGCTC CTTTCTGGTA TCTCACAGGA CATTTTCTTC

2510 2520 2530 2540 2550 2560 2570 2580 2590 2600

CCACAG|ATAG AAAAGGAGGG AGCTACTCTC AGGCTGCAA|G TAAGTATGAA GGAGGCTGAT GCCTGAGGTC CTTGGGATAT TGTGTTTGGG AGCCCATGGG

2610 2620 2630 2640 2650 2660 2670 2680 2690 2700

GGAGCTCAAC CACCCCACAA TTCCTCCTCT AGCCACATCT TCTGTGGGAT CTGACCAGGT TCTGTTTTTG TTCTACCCCA G|GCAGTGACA GTGCCCAGGG

2710 2720 2730 2740 2750 2760 2770 2780 2790 2800

CTCTGATGTG TCTCTCACAG CTTGTAAAG|G TGAGAGCTTG GAGGGCCTGA TGTGTGTTGG GTGTTGGGCG GAACAGTGGA CACAGCTGTG CTATGGGGTT

2810 2820 2830 2840 2850 2860 2870 2880 2890 2900

TCTTTGCATT GGATGTATTG AGCATGCGAT GGGCTGTTTA AAGTGTGACC CCTCACTGTG ACAGATATGA AGTTGTTCAT GAATTTTTTT TCTATAG|TGT

2910 2920 2930 2940 2950 2960 2970 2980 2990 3000

GA|GACAGCTG CCTTGTGTGG GACTGAGAGG CAAGAGTTGT TCCTGCCCTT CCCTTTGTGA CTTGAAGAAC CCTGACTTTG TTTCTGCAAA GGCACCTGCA

3010 3020 3030 3040 3050 3060 3070 3080 3090 3100

TGTGTCTGTG TTCATGTAGG CATAATGTGA GGAGGTGGGG AGACCACCCC ACCCCCATGT CCACCATGAC CCTCTTCCCA CGCTGACCTG TGCTCCCTCC

3110 3120 3130 3140 3150 3160 3170 3180 3190 3200

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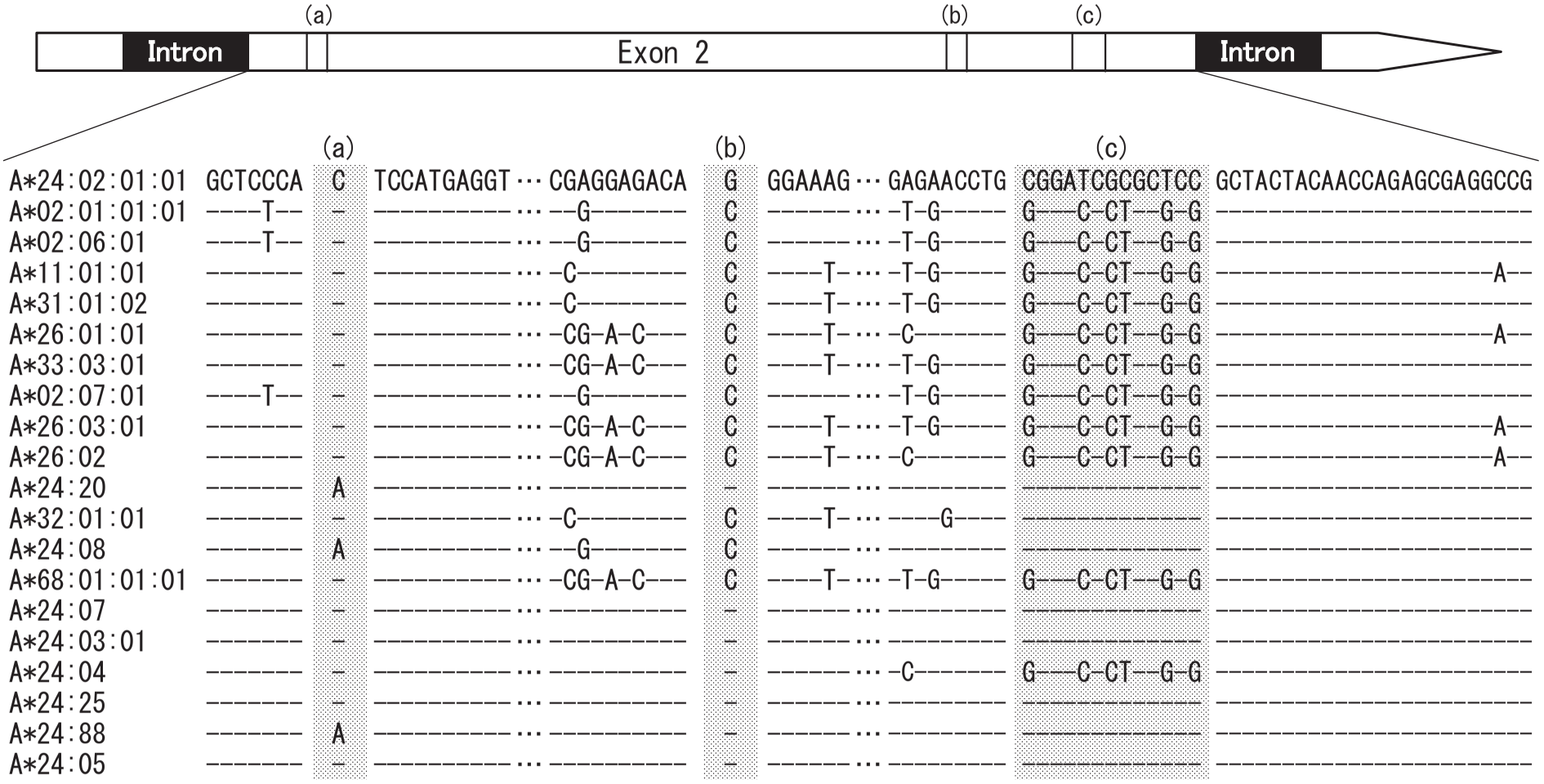
AA

FIG. 2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A*11:01:01 ------- - ---------- ··· -C-------- C ----T- ··· -T-G----- G---C-CT--G-G ----------A--
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FIG. 3

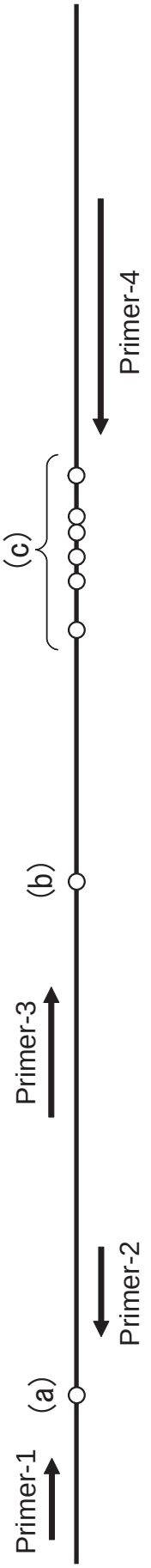
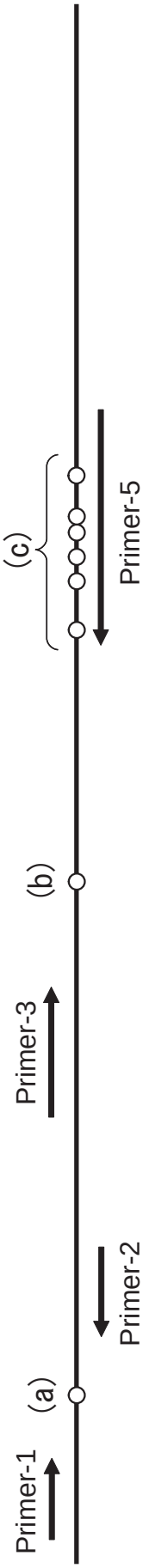


FIG. 4



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1               5                  10                  15

CTG GCC CTG ACC CAG ACC TGG GCA GGC TCC CAC TCC ATG AGG TAT TTC    96
Leu Ala Leu Thr Gln Thr Trp Ala Gly Ser His Ser Met Arg Tyr Phe
            20                  25                  30

TCC ACA TCC GTG TCC CGG CCC GGC CGC GGG GAG CCC CGC TTC ATC GCC   144
Ser Thr Ser Val Ser Arg Pro Gly Arg Gly Glu Pro Arg Phe Ile Ala
        35                  40                  45

GTG GGC TAC GTG GAC GAC ACG CAG TTC GTG CGG TTC GAC AGC GAC GCC   192
Val Gly Tyr Val Asp Asp Thr Gln Phe Val Arg Phe Asp Ser Asp Ala
    50                  55                  60

GCG AGC CAG AGG ATG GAG CCG CGG GCG CCG TGG ATA GAG CAG GAG GGG   240
Ala Ser Gln Arg Met Glu Pro Arg Ala Pro Trp Ile Glu Gln Glu Gly
65                  70                  75                  80

CCG GAG TAT TGG GAC GAG GAG ACA GGG AAA GTG AAG GCC CAC TCA CAG   288
Pro Glu Tyr Trp Asp Glu Glu Thr Gly Lys Val Lys Ala His Ser Gln
                85                  90                  95

ACT GAC CGA GAG AAC CTG CGG ATC GCG CTC CGC TAC TAC AAC CAG AGC   336
Thr Asp Arg Glu Asn Leu Arg Ile Ala Leu Arg Tyr Tyr Asn Gln Ser
            100                 105                 110

GAG GCC GGT TCT CAC ACC CTC CAG ATG ATG TTT GGC TGC GAC GTG GGG   384
Glu Ala Gly Ser His Thr Leu Gln Met Met Phe Gly Cys Asp Val Gly
        115                 120                 125

TCG GAC GGG CGC TTC CTC CGC GGG TAC CAC CAG TAC GCC TAC GAC GGC   432
Ser Asp Gly Arg Phe Leu Arg Gly Tyr His Gln Tyr Ala Tyr Asp Gly
    130                 135                 140

AAG GAT TAC ATC GCC CTG AAA GAG GAC CTG CGC TCT TGG ACC GCG GCG   480
Lys Asp Tyr Ile Ala Leu Lys Glu Asp Leu Arg Ser Trp Thr Ala Ala
145                 150                 155                 160

GAC ATG GCG GCT CAG ATC ACC AAG CGC AAG TGG GAG GCG GCC CAT GTG   528
Asp Met Ala Ala Gln Ile Thr Lys Arg Lys Trp Glu Ala Ala His Val
                165                 170                 175

GCG GAG CAG CAG AGA GCC TAC CTG GAG GGC ACG TGC GTG GAC GGG CTC   576
Ala Glu Gln Gln Arg Ala Tyr Leu Glu Gly Thr Cys Val Asp Gly Leu
            180                 185                 190

CGC AGA TAC CTG GAG AAC GGG AAG GAG ACG CTG CAG CGC ACG GAC CCC   624
Arg Arg Tyr Leu Glu Asn Gly Lys Glu Thr Leu Gln Arg Thr Asp Pro
        195                 200                 205

CCC AAG ACA CAT ATG ACC CAC CAC CCC ATC TCT GAC CAT GAG GCC ACT   672
Pro Lys Thr His Met Thr His His Pro Ile Ser Asp His Glu Ala Thr
    210                 215                 220

CTG AGA TGC TGG GCC CTG GGC TTC TAC CCT GCG GAG ATC ACA CTG ACC   720
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Leu Arg Cys Trp Ala Leu Gly Phe Tyr Pro Ala Glu Ile Thr Leu Thr
225                 230                 235                 240

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Trp Gln Arg Asp Gly Glu Asp Gln Thr Gln Asp Thr Glu Leu Val Glu
                245                 250                 255

ACC AGG CCT GCA GGG GAT GGA ACC TTC CAG AAG TGG GCA GCT GTG GTG   816
Thr Arg Pro Ala Gly Asp Gly Thr Phe Gln Lys Trp Ala Ala Val Val
            260                 265                 270

GTA CCT TCT GGA GAG GAG CAG AGA TAC ACC TGC CAT GTG CAG CAT GAG   864
Val Pro Ser Gly Glu Glu Gln Arg Tyr Thr Cys His Val Gln His Glu
        275                 280                 285

GGT CTG CCC AAG CCC CTC ACC CTG AGA TGG GAG CCA TCT TCC CAG CCC   912
Gly Leu Pro Lys Pro Leu Thr Leu Arg Trp Glu Pro Ser Ser Gln Pro
    290                 295                 300

ACC GTC CCC ATC GTG GGC ATC ATT GCT GGC CTG GTT CTC CTT GGA GCT   960
Thr Val Pro Ile Val Gly Ile Ile Ala Gly Leu Val Leu Leu Gly Ala
305                 310                 315                 320

GTG ATC ACT GGA GCT GTG GTC GCT GCT GTG ATG TGG AGG AGG AAC AGC  1008
Val Ile Thr Gly Ala Val Val Ala Ala Val Met Trp Arg Arg Asn Ser
                325                 330                 335

TCA GAT AGA AAA GGA GGG AGC TAC TCT CAG GCT GCA AGC AGT GAC AGT  1056
Ser Asp Arg Lys Gly Gly Ser Tyr Ser Gln Ala Ala Ser Ser Asp Ser
            340                 345                 350

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