Supplementary Material

**Structure/epitope-based immunoinformatics analysis of structural proteins of 2019 novel coronavirus**

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**Table S1** The predictions results of B-cell epitopes of S protein .

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| Tools | Location of the prediction results |
| DNAStar  | 20-30,40-45,71-86,95-101,108-117,147-152,178-191,251-258,279-286,315-325,355-361,381-387,408-430,439-449,471-485,526-540,552-559,569-581,601-607,657-660,675-687,773-781,789-798,806-817,935-942,1080-1088, 1112-1124.  |
| BepiPred  | 21-31,71-81,110-113,250-258,280-287,382-387,407-428,439-447,461-484,496-506, 526-532,551-554,567-580,601-607,636-643,656-659,675-687,700-707,772-780,789-797,805-816,936-941,1054-1059,1069-1090,1114-1122,1137-1150,1157-1171. |
| CBTOPE | 21-32,66-77,134-147,164-167,174-181,203-215,256-274,280-286,304-325,345-356, 376-389,408-415,423-455,472-524,550-557,598-621,636-643,659-674,725-737,753-768,776-788,804-824,903-941,961-976,1022-1049,1075-1088,1098-1119,1137-1146, 1154-1178. |

**Table S2** The predictions results of T-cell epitopes of S protein.

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| Tools | Location of the prediction results |
| DRB1∗01:01 | 2–10,4–12,5–13,7–15,40–48,46–54,53–61,55–63,58–66,62–70,65–73,98–106,104–112,115–123,117–125,157–165,168–176,169–177,186–194,200–208,220–228,223–231,233–241,235–243,238–246,239–247,241–249,242–250,258–266,259–267,267–275,268–276,269–277,275–283,300–308,306–314,312–320,318–326,342–350,347–355,365–373,377–385,379–387,394–402,451–459,453–461,489–497,502–510,505–513,510–518,515–523,517–525,531–539,538–546,543–551,582–590,590–598,627–635,642–650,643–651,648–656,686–694,689–697,693–701,695–703,696–704,711–719,718–726,724–734,752–760,759–767,764–772,797–805,802–810,818–826,821–829,826–834,833–841,855–863,858–866,869–867,870–878,874–882,875–883,886–884,888–896,891–899,898–906,927–935,959–967,962–970,963–971,970–978,993–1001,994–1002,996–1004,1001–1009,1005–1013,1007–1015,1010–1018,1032–1040, 1041–1049,1042–1050,1047–1055,1048–1056,1060–1068,1062–1070,1075–1083,1103–1111,1129–1137,1169–1177,1215–1223,1216–1224,1217–1225,1218–1226,1220–1228,1241–1249,1262–1270,1265–1273. |
| DRB3∗01:01 | 28–36,36–42,37–45,42–50,43–51,47–55,50–58,57–65,58–66,78–86,85–93,118–126,119–127,127–135,132–140,133–141,134–142,135–143,144–152,145–153,152–160,160–168,168–176,169–177,170–178,174–182,175–183,186–194,192–200,193–202,195–203,211–219,212–220,225–233,230–238,240–248,269–277,277–285,284–292,291–298,306–314,312–320,318–326,340–348,357–365,361–369,367–375,369–377,392–400,394–402,395–403,399–407,401–409,402–410,417–425,421–429,445–453,456–464,463–471,464–472,489–497,495–503,497–505,505–513,507–515,551–559,564–572,565–573,568–576,584–592,624–632,627–635,635–643,643–651,658–666,659–667,660–668,699–707,706–714,718–726,734–742,741–749,780–788,781,789–797,800–808,805–813,816–824,817–825,821–829,825–833,826–834,833–841,836–844,863–871,864–872,898–906,903–911,904–912,915–913,926–934,976–984,990–998,991–999,1067–1075,1081–1089,1094–1102,1095–1103,1102–1110,1114–1122,1115–1123,1148–1156,1208–1216,1220–1228,1256–1264. |
| DRB4∗01:01 | 7–15,8–16,16–24,47–55,97–105,98–106,115–123,116–124,117–125,127–135,168–176,190–198,208–216,209–217,210–218,223–231,230–238,233–241,234–242,235–243,236–244,237–245,238–246,317–325,507–515,508–516,509–517,511–519,557–565,558–566,579–587,607–615,608–616,684–692,685–693,690–698,691–699,750–758,751–759,781–789,814–822,815–823,847–855,856–864,857–865,861–869,862–870,863–871,890–898,891–899,894–902,895–903,896–904,897–905,908–916,919–917,920–928,921–929,959–967,960–968,972–980,973–981,993–1001,995–1003,996–1004,999–1007,1004–1012, 1005–1013,1006–1014,1007–1015,1010–1018,1011–1019,1047–1055,1048–1056,1057–1065,1129–1137,1175–1183,1176–1184,1195–,1218–1226,1225–1233,1226–1234,1263–1271,1264–1272. |
| DRB5∗01:01 | 4–12,36–44,42–50,55–63,58–66,65–73,70–78,98–106,133–141,139–147,140–148,144–152,150–158,169–177,175–183,179–187,186–194,187–195,194–202,199–207,200–208,238–246,258–266,265–273,267–275,269–277,306–314,311–319,312–320,318–326,320–328,338–346,347–355,349–357,350–358,370–378,379–387,400–408,449–457,450–458,453–461,454–462,458–466,489–497,508–516,515–523,527–535,543–551,550–558,559–567,626–634,674–682,695–703,718–726,725–733,758–766,778–786,782–790,787–795,817–825,826–834,827–835,833–841,847–855,886–894,888–896,892–900,894–902,897–905,898–906,925–933,927–935,939–947,956–964,970–978,993–1001,994–1002,1007–1015,1011–1019, 1020–1028,1032–1040,1046–1054,1065–1073,1075–1083,1094–1102,1095–1103,1103–1111,1141–1149,1208–1216,1217–1225,1264–1272. |
| HLA-DQA10102-DQB10502 | 1–9,32–40,46–54,61–69,63–71,64–72,104–112,132–140,133–141,140–148,141–149,170–178,171–179,172–180,173–181,189–197,192–200,216–224,258–266,261–269,262–270,263–271,265–273,273–281,275–283,338–346,347–355,357–365,392–400,420–428,421–429,447–455,485–493,486–494,515–523,516–524,562–570,563–571,564–572,565–573,606–614,607–615,620–628,622–630,656–664,766–774,767–775,800–808,813–821,814–822,823–831,829–837,833–841,840–848,865–873,869–877,888–896,898–906,923–931,1011–1019,1044–1052,1046–1054,1047–1055,1061–1069,1098–1106,1099–1107, 1106–1114,1132–1140,1144–1152,1145–1153,1192–1200,1193–1201,1202–1210,1214–1222,1216–1224,1217–1225,1220–1228. |
| HLA-DQA10201-DQB10301 | 9–17,10–18,15–23,17–25,18–26,19–27,31–39,42–50,59–67,112–120,119–127,120–128,252–260,253–261,254–262,255–263,256–264,257–265,258–266,259–267,260–268,280–288,281–289,282–290,283–291,284–294,301–309,340–348,341–349,342–350,344–352,345–353,367–375,368–376,369–377,370–378,371–379,391–399,411–419,427–435,429–437,467–475,471–479,472–480,474–482,492–500,517–525,543–551,545–553,546–554,547–555,569–577,587–595,589–597,590–598,591–599,592–600,596–604,597–605,598–606,601–609,602–610,603–611,604–612,618–626,634–642,635–643,636–644,637–645,643–651,644–652,645–653,649–657,664–672,665–673,666–674,672–680,680–688,684–692,685–693,686–694,687–695,688–696,690–698,692–700,693–701,694–702,695–703,696–704,698–706,705–713,707–715,713–721,716–724,717–725,718–726,719–727,720–728,721–729,722–730,728–736,729–737,730–738,735–743,743–751,754–762,763–771,764–772,765–773,766–774,826–834,827–835,844–852,855–863,868–876,870–878,871–879,872–880,873–881,874–882,875–883,876–884,877–885,881–889,882–900,883–891,884–892,885–893,886–894,887–895,888–896,889–897,927–935,934–942,935–943,936–944,937–945,938–946,939–947,940–948,941–949,965–973,966–974,967–975,968–976,969–977,970–978,996–1004,997–1005,1002–1010,1008–1016,1012–1020,1017–1025,1018–1026,1019–1027,1020–1028,1021–1029,1022–1030,1026–1034,1027–1035,1062–1070,1072–1080,1074–1082,1075–1083,1076–1084,1096–1104,1114–1122,1115–1123,1116–1124,1120–1128,1121–1129,1122–1130,1169–1177,1170–1178,1218–1226,1220–1228,1227–1235,1230–1238,1235–1243,1236–1244,1237–1245,1247–1255. |
| HLA-DQA10501-DQB10302 | 7–15,10–18,42–50,43–51,58–66,59–67,63–71,64–72,88–96,104–112,114–122,115–123,157–165,158–166,169–177,170–178,172–180,217–225,218–226,219–227,236–244,237–245,255–263,256–264,257–265,258–266,259–268,260–268,263–271,264–272,283–291,301–309,328–336,340–348,344–352,345–353,346–354,367–375,368–376,379–377,390–398,391–399,429–437,472–480,488–496,506–514,508–516,513–521,515–523,516–524,517–525,518–526,519–527,546–554,547–555,590–598,591–599,592–600,593–601,604–612,606–614,618–626,619–627,620–628,635–643,636–644,645–653,646–654,663–671,664–672,665–673,666–674,667–675,668–676,684–692,686–694,687–695,688–696,689–697,690–698,693–701,694–702,695–703,706–704,707–715,716–724,717–725,718–726,719–727,720–728,730–738,735–743,754–762,755–763,756–764,765–773,766–774,767–775,799–807,800–808,821–829,822–830,840–848,853–861,854–862,855–863,860–868,868–876,870–878,871–879,872–880,873–881,874–882,875–883,878–,885–,886–894,887–895,888–896,889–897,890–898,891–899,892–900,895–903,896–904,904–912,936–944,937–945,938–946,968–976,969–977,970–978,971–979,972–980,1001–1010,1009–1017,1010–1018,1017–1025,1018–1026,1019–1027,1024–1032,1045–1053,1046–1054,1048–1056,1049–1057,1055–1063,1061–1069,1062–1070,1063–1071,1064–1072,1074–1082,1075–1083,1076–1084,1110–1118,1131–1139,1169–1177,1170–1178,1217–1225,1218–1226,1221–1229,1235–1243,1236–1244. |
| HLA-DQA10601-DQB10402 | 4–12,6–14,13–21,15–23,16–24,26–34,27–35,28–36,29–37,30–38,36–44,41–49,43–51,44–52,56–64,57–65,58–66,59–67,60–68,61–69,62–70,63–71,64–72,65–73,90–98,91–99,94–102,116–124,124–132,150–158,155–163,199–207,200–208,201–209,202–210,206–214,229–237,238–246,239–247,240–248,255–263,256–264,263–271,264–272,265–273,266–274,268–276,270–278,301–309,304–312,311–319,313–321,316–324,320–328,341–349,342–350,345–353,347–355,348–356,349–357,350–358,351–359,360–368,365–373,369–377,372–380,373–381,374–382,375–383,377–385,395–403,400–408,430–438,449–457,450–458,451–459,468–476,486–494,488–496,490–498,503–511,505–513,506–514,514–522,617–625,620–628,628–636,629–637,630–638,631–639,633–641,638–646,640–648,641–649,669–677,974–682,680–688,689–697,690–698,691–699,692–700,693–701,694–702,705–703,713–721,714–722,715–723,716–724,717–725,718–726,719–727,722–730,724–732,725–733,726–734,727–735,728–736,757–765,759–767,760–768,787–795,821–829,868–876,871–879,873–881,875–883,880–888,881–889,883–891,884–892,886–894,893–901,894–902,895–903,896–904,898–906,927–935,937–945,995–1003,1002–1010,1004–1012,1005–1013,1006–1014,1007–1015,1008–1016,1009–1017,1011–1019,1022–1030,1047–1055,1048–1056,1059–1067,1061–1069,1062–1070,1063–1071,1064–1072,1073–1081,1074–1082,1075–1083,1093–1101,1094–1102,1098–1106,1099–1107,1100–1108,1101–1109,1102–1110,1154–1162,1206–1214,1207–1215,1208–1216,1209–1217,1210–1218,1212–1220,1214–1222,1215–1223. |
| HLA-DPA10103-DPB10601 | 1–9,2–10,3–11,4–12,5–13,31–39,32–40,42–50,50–58,51–59,52–60,53–61,54–62,58–66,59–67,78–86,100–108,104–112,127–135,128–136,130–138,132–140,133–141,134–142,135–143,139–147,140–148,167–175,168–176,170–178,188–196,189–197,233–241,237–245,238–246,264–272,265–273,273–281,288–296,387–495,390–398,391–399,395–403,429–437,448–456,449–457,450–458,451–459,456–464,489–497,492–500,507–515,508–516,509–517,510–518,511–519,512–520,513–521,514–522,538–546,557–567,581–589,749–857,754–762,800–808,815–823,816–824,817–825,818–826,855–863,1046–1054,1047–1055,1060–1068,1061–1069,1062–1070,1109–1117,1132–1140,1208–1210,1209–1217,1210–1218,1211–1219,1212–1220,1213–1221,1214–1222,1215–1223,1216–1224,1220–1228,1224–1232,1225–1233,1226–1234,1227–1235,1228–1236,1229–1237,1231–1239,1232–1240,1233–1241. |
| HLA-DPA10201-DPB10101 | 2–10,4–12,40–48,41–49,42–50,48–56,51–59,52–60,53–61,54–62,55–63,58–66,59–67,78–86,102–110,110–118,112–120,133–141,138–146,139–147,140–148,152–160,167–175,168–176,169–177,170–178,186–194,188–196,189–197,193–201,200–208,233–241,235–243,237–245,238–246,262–270,269–277,302–310,312–320,340–348,341–349,342–350,369–377,392–400,449–457,450–458,453–461,505–513,508–516,509–517,510–518,511–519,512–520,556–564,557–565,558–566,559–567,577–585,579–587,581–589,719–727,725–733,797–805,814–822,815–823,816–824,817–825,818–826,820–828,821–829,822–830,833–841,853–861,854–862,870–878,893–901,915–923,962–970,996–1004,1000–1008, 1059–1067,1062–1070,1107–1115,1148–1156,1195–1203,1208–1216,1209–1217,1213–1221,1214–1222,1217–1225,1220–1228,1264–1272,1265–1273. |
| HLA-DPA10201-DPB10501 | 4–12,36–44,41–49,42–50,50–58,51–59,52–60,53–61,58–66,76–84,89–97,90–98,127–135,139–147,140–148,168–176,186–194,187–195,188–196,189–197,194–202,195–203,199–207,200–208,235–243,236–244,237–245,238–246,269–277,302–310,342–350,449–457,450–458,451–459,453–461,456–464,508–516,509–517,511–519,512–520,527–535,528–536,550–558,551–559,555–563,556–564,557–565,558–566,559–567,794–802,814–822,815–823,816–824,817–825,818–826,870–878,898–906,915–923,1012–1020,1149–1157,1203–1211,1214–1222,1215–1223,1264–1272. |
| HLA-DPA10301-DPB10402 | 4–12,5–13,41–49,42–50,43–51,48–56,51–59,52–60,54–62,55–63,58–66,59–67,62–70,112–120,127–135,133–141,135–143,138–146,139–147,140–148,152–160,168–176,169–177,170–178,189–197,200–208,205–213,218–226,233–241,234–242,235–243,236–244,237–245,238–246,241–249,262–270,263–271,264–272,312–320,313–321,342–350,344–352,392–400,449–457,450–458,451–459,486–494,508–516,509–517,510–518,511–519,512–520,557–565,577–585,579–587,580–588,643–651,691–699,719–727,721–729,752–760,753–761,759–767,797–805,814–822,815–823,816–824,817–825,818–826,820–828,821–829,826–834,833–841,853–861,858–866,862–870,863–871,864–872,869–877,870–878,871–879,904–912,915–913,973–981,976–984,993–1001,996–1004,1005–1013,1006–1014,1007–1015,1057–1065,1058–1066,1060–1068,1062–1070,1214–1222,1264–1272 |

**Table S3** The predictions results of B-cell epitopes and T-cell epitopes of E protein .

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| Type | Tools | Location of the prediction results |
| B-cell epitope prediction | DNAStar  | 3-10,52-70. |
| CBTOPE | 3-8,52-63. |
| BepiPred  | 2-8,47-68.  |
| T-cell epitope prediction (HLA-DR) | DRB1∗01:01 | 10–18,11–19,26–34,31–39,36–44,44–52,49–57,50–58,57–65,62–70. |
| DRB3∗01:01 | 4–12,12–20,57–65. |
| DRB4∗01:01 | 10–18,30–38,31–39. |
| DRB5∗01:01 | 4–12,30–38,31–39,36–44,49–57,55–63,56–64,61–69. |
| T-cell epitope prediction (HLA-DQ) | HLA-DQA10102-DQB10502 | 1–9,17–25,20–28. |
| HLA-DQA10201-DQB10301 | 6–14,7–15,8–16,14–22,24–32,27–35,28–36,29–37,30–38,32–40,33–41,46–54. |
| HLA-DQA10501-DQB10302 | 1–9,8–16,32–40,35–43,36–44. |
| HLA-DQA10601-DQB10402 | 2–8,10–18,18–26,21–29,24–32,25–33,26–34,27–35,29–37,30–38,32–40,33–41,40–48,42–50,45–53,52–60,54–62,55–63,56–64, 57–65. |
| T-cell epitope prediction (HLA-DP) | HLA-DPA10103-DPB10601 | 1–9,12–20,13–21,15–23,16–24,17–25,18–26,19–27,20–28,21–29,22–30,23–31,24–32,25–33,26–34,27–35,28–36,29–37,31–39,36–44,37–45,46–54,51–59. |
| HLA-DPA10201-DPB10101 | 4–12,26–34,30–38,44–52,45–53. |
| HLA-DPA10201-DPB10501 | 11–19,14–22,30–38,31–39,53–61,55–63,56–64,57–65. |
| HLA-DPA10301-DPB10402 | 10–18,11–19,12–20,26–34,31–39,32–40,33–41,39–47,44–52,55–63,57–65. |

**Table S4** The predictions results of B-cell epitopes and T-cell epitopes of M protein.

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| Type | Tools | Location of the prediction results |
| B-cell epitope prediction | DNAStar protean | 2-18,40-45,104-117,157-176,183-194,203-217. |
| CBTOPE | 4-10, 171-176, 185-194. |
| BepiPred  |  1-8,112-113, 169-176,185-194,206-215. |
| T-cell epitope prediction (HLA-DR) | DRB1∗01:01 | 14–22,15–23,16–24,20–28,32–40,33–41,35–43,43–51,53–61,54–62,55–63,64–72,65–73,73–81,75–83,79–87,80–88,93–101,94–102,95–103,100–108,112–120,117–125,118–126,121–129,126–134,127–135,136–144,142–150,148–156,149–157,168–176,173–181,178–186,179–187. |
| DRB3∗01:01 |  8–13,16–24,37–45,38–46,65–73,71–79,92–100,94–102,95–103,96–104,101–109,110–118,112–120,160–168,170–178,179–187,186–194,187–195,198–206,204–212,212–220. |
| DRB4∗01:01 | 5–13,12–20,13–21,14–22,15–23,24–32,32–40,43–51,44–52,45–53,48–56,49–57,50–58,79–87,100–108,116–124,117–125,125–133,126–134,131–139,132–140,136–144,141–149,147–155,148–156. |
| DRB5∗01:01 | 7–12,20–28,33–41,34–42,35–43,36–44,37–45,42–50,47–55,54–62,64–72,65–73,93–101,94–102,95–103,97–105,99–107,100–108,101–109,103–111,138–146,142–150,147–155,148–156,168–176,172–180,178–186,179–187,192–200,193–201,197–205,198–206. |
| T-cell epitope prediction (HLA-DQ) | HLA-DQA10102-DQB10502 | 16–24,17–25,33–41,34–42,35–43,36–44,41–49,43–51,52–60,53–61,54–62,55–63,65–73,89–97,91–99,92–100,96–104. |
| HLA-DQA10201-DQB10301 | 1–9,2–10,3–11,4–12,60–68,61–69,64–72,73–81,74–82,75–83,76–84,77–85,80–88,81–89,86–94,96–104,122–130,138–146,139–147,168–175,169–177,170–178,171–179,180–188,181–189,187–195,188–196,210–218,211–219. |
| HLA-DQA10501-DQB10302 | 4–12,30–38,57–65,58–66,60–68,63–71,64–72,75–83,76–84,77–85,78–86,79–87,80–88,124–132,213–221. |
| HLA-DQA10601-DQB10402 | 6–14,25–33,26–34,28–36,31–39,37–45,44–52,45–53,47–55,52–60,53–61,55–63,56–64,60–68,62–70,63–71,64–72,65–73,66–74,69–77,73–81,75–83,84–92,90–98,92–100,93–101,94–102,95–103,96–104,97–105,98–106,99–107,100–108,101–109,102–110,103–111,104–112,108–116,120–128,126–134,127–135,138–146, 142–150,143–151,149–157,166–174,167–175,168–176,169–177,172–180,173–181,174–182,177–185,178–186,191–199,193–201,194–202. |
| T-cell epitope prediction (HLA-DP) | HLA-DPA10103-DPB10601 | 19–27,20–28,21–29,22–30,23–31,24–32,25–33,26–34,27–35,28–36,29–37,30–38,31–39,32–40,34–42,43–51,44–52,45–53,46–54,47–55,48–56,49–57,50–58,51–59,52–60,53–61,54–62,55–63,57–65,60–68,61–69,62–70,63–71,64–72,65–73,66–74,70–78,82–90,84–92,85–93,86–94,87–95,88–96,89–97,90–98,91–99,92–100,93–101,94–102,95–103,128–136,138–146. |
| HLA-DPA10201-DPB10101 | 5–13,7–15,14–22,15–23,21–29,28–36,31–39,34–42,42–50,43–51,44–52,53–62,54–62,55–63,64–74,65–73,89–97,90–98,92–100,93–101,94–102,95–103,96–104,97–105,99–107,112–120,117–125,123–131,127–135,130–138,131–139,132–140,173–181,193–201. |
| HLA-DPA10201-DPB10501 | 7–15,8–14,14–22,15–23,28–36,34–42,37–45,41–49,42–50,43–51,44–52,54–62,55–63,62–70,64–72,65–73,89–97,90–98,91–99,93–101,94–102,95–103,96–104,97–105,99–107,100–108,101–109,117–125,132–140,138–146,142–150,143–151,144–152,173–181,193–201,199–207. |
| HLA-DPA10301-DPB10402 | 8–16,15–23,16–24,21–29,26–34,27–35,28–36,34–42,42–50,53–61,55–63,65–73,86–94,89–97,90–98,92–100,94–102,95–103,96–104,97–105,112–120,117–125,118–126,126–134,127–135,128–136,131–139,132–140,137–145,143–151,144–152,148–156,168–176,193–201. |

**Table S5** The predictions results of B-cell epitopes and T-cell epitopes of N protein .

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| Type | Tools | Location of the prediction results |
| B-cell epitope prediction | DNAStar  | 5-12,19-48,59-70,78-84,90-106,114-120,122-130,139-152,162--215,227-264,274-300, 323-329, 334-349,357-389,400-405,414-418. |
| CBTOPE | 1-8,23-30,43-46,54-56,70-73,79-86,100-111,145-147,164-178, 230-244, 266-300,310-327,355-383,404-410. |
| BepiPred | 1-51,58-85,93-104,115-127,137-154,164-216,232-269,273-287,291-301,306-310,323-331,338-347,361-387. |
| T-cell epitope prediction (HLA-DR) | DRB1∗01:01 | 52–60,53–61,110–118,111–119,130–138,132–140,157–165,159–167,165–173,215–223,219–227,222–230,227–235,314–322,330–338,331–339,349–357,351–359,360–368,392–400. |
| DRB3∗01:01 | 86–94,100–108,125–133,213–221,221–229,222–230,266–274, 306–314,307–315,345–353,351–359,355–363,374–382. |
| DRB4∗01:01 | 130–138,153–161,154–162,155–163,156–164,157–165,217–225,218–226,219–227,220–228,221–229,222–230,303–311,348–352,349–357,350–358,351–359,392–400. |
| DRB5∗01:01 | 6–14,28–36,32–40,52–60,53–61,85–93,86–94,87–95,94–102, 110–118,157–165,171–179,177–185,181–189,183–191,187–195,249–257,253–261,254–262,258–266,268–276,291–299,292–300,307–315,311–319,314–322,330–338,331–339,349–357,353–361,379–387,392–400. |
| T-cell epitope prediction (HLA-DQ) | HLA-DQA10102-DQB10502 | 56–64,83–91,107–115,108–116,152–160,153–161,217–225,218–226,219–227,223–231,282–290,286–294,303–311,333–341,351–359,352–360,353–361,393–401,394–402,395–403. |
| HLA-DQA10201-DQB10301 | 15–23,47–55,48–56,49–57,50–58,112–120,113–121,131–139, 132–140,133–141,134–142,152–160,174–182,176–184,180–188,182–190,197–205,198–207,199–207.200–208,201–209,202–210,203–211,210–218,211–219,212–220, 244–252,245–253,246–254,247–255,263–271,303–311,304–312,305–313,307–315,308–316,309–317,310–318,323–331,324–332,325–333,330–338,331–339,332–340,389–397,390–398,391–399,406–414,408–416,409–417,410–418,411–419. |
| HLA-DQA10501-DQB10302 | 49–57,50–58,51–59,110–118,111–119,129–137,130–138,151–159,154–162,203–211,213–221,214–222,217–225,300–308,301–309,304–312,305–313,306–314,307–315,308–316,309–317,310–318,313–321,314–322,315–323,317–325,318–326,324–332,332–340,333–341,388–396,389–397,390–398,391–399,392–400,393–401,394–402,407–415,408–416. |
| HLA-DQA10601-DQB10402 | 48–56,49–57,50–58,51–59,52–60,53–61,54–62,83–91,84–92,85–93,86–94,87–95,106–114,108–116,111–119,130–138,169–177, 244–252,263–271,268–276,269–277,298–306,305–313,311–319,313–321,314–322,322–330,327–335,328–336,329–337,330–338,331–339,390–398. |
| T-cell epitope prediction (HLA-DP) | HLA-DPA10103-DPB10601 | 107–115,108–116,109–117,110–118,217–225,218–226,219–227. |
| HLA-DPA10201-DPB10101 | 49–57,50–58,105–113,155–163,216–224,217–225,218–226,219–227,220–228,221–229,222–230,345–353,346–354,387–395. |
| HLA-DPA10201-DPB10501 | 105–113,106–114,218–226,219–227,220–228,221–229,311–319, 330–338,331–339,346–354,349–357,387–395. |
| HLA-DPA10301-DPB10402 | 49–57,218–226,219–227,220–228,221–229,222–230,317–325, 331–339,387–395. |