OPTN

Public Comment Proposal

2025 Histocompatibility HLA Table Update

OPTN Histocompatibility Committee

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Contents

2025 Histocompatibility HLA Table Update

Affected Policy: *4.11: Reference Tables of HLA Antigen Values and Split Equivalences*
Sponsoring Committee: *Histocompatibility*
Public Comment Period: *August 27, 2025-October 1, 2025*

Executive Summary

OPTN Policy 4.10: HLA Value Updates requires the OPTN Histocompatibility Committee (Committee) to review the Human Leukocyte Antigen (HLA) equivalency tables listed in *OPTN Policy 4.11: Reference Tables of HLA Antigen Values and Split Equivalences* on an annual basis and recommend any changes needed.

The Committee has conducted its review and is seeking to update *OPTN Policy 4.11: Reference Tables of HLA Antigen Values and Split Equivalences*. The Committee is proposing the following areas of change:

1. The Committee proposes adding necessary p-values to *Table 4-16: Epitope based Unacceptable Antigen Assignment for DPB1* based on the International Immunogenetics (IMGT) information system release at time of creation for the *Update HLA Equivalency Tables, 2023* proposal. This current proposal takes the p-groups (protein groups, used for multi-field typing) that were added to policy in the *Update HLA Equivalency Tables, 2023* and assigns them to their DP epitope equivalences.
2. This update also proposes the addition of allele C*04:09L *to Table 4-7: HLA C Unacceptable Antigen Equivalences*, which aligns with the IMGT information system change of the allele from null to low expression. This will make a change to donor typing, aligning this value with a notable IMGT allele status change update.[1]

The Committee is proposing to use the expedited actions pathway for these updates, pursuant to *OPTN Policy 4.10: HLA Value Updates* and *OPTN Management and Membership Policies E.8: Expedited Actions*.[2]

[1] Allele Report for C*04:09L, IMGT/HLA, https://www.ebi.ac.uk/ipd/imgt/hla/ (accessed May 16, 2025).
[2] OPTN Board of Directors, Executive Committee, June 2020, https://optn.transplant.hrsa.gov/media/3851/20200608_board_mtg_executive_summary.pdf (accessed June 10, 2025).

Purpose

OPTN histocompatibility policies contain tables listing HLA antigens and alleles to be used in the matching algorithms for kidney, pancreas, and kidney-pancreas allocation. Additional tables list unacceptable antigens (UAs) that can be used to screen potential incompatible donors. It is important that the tables are updated in order to facilitate more precise compatibility screening which reduces chances for graft rejection.

The Committee conducted their required annual review of the HLA equivalency tables and identified the following areas of change:

- The Committee will be adding necessary p-values to *Table 4-16: Epitope based Unacceptable Antigen Assignment for DPB1* based on the IMGT information system release at time of creation of the *Update HLA Equivalency Tables, 2023.* This proposal takes the p-groups that were added to policy in the *Update HLA Equivalency Tables, 2023* and assigns them to their DP epitope equivalences
- This update will add C*04:09L *to Table 4-7: HLA C Unacceptable Antigen Equivalences*, which aligns with the IMGT information system change of the allele from null to low expression. This will make a change to donor typing, aligning this value with the newest IMGT updates.

Background

In December 2024, the *Update HLA Equivalency Tables, 2023* was implemented in the OPTN Computer System.[3] The update added p-groups to existing histocompatibility tables in OPTN policy. Community feedback indicated that additional typing fields should be updated to include p-groups specifically to *Table 4-16: Epitope based Unacceptable Antigen Assignment for DPB1* values, as this increases preciseness of typing and aligns with histocompatibility laboratory practices that were not previously considered in the last update.

In IMGT database serves as a database for HLA alleles named by the World Health Organization Nomenclature Committee, who is granted responsibility for naming these alleles. In January 2025, there was an allele update in the IMGT database, with allele C*04:09 moving from null (C*04:09N) to low expression (C*04:09L).[4] C*04:09 was one of the most commonly listed null alleles.[5] Therefore, the Committee proposes that policy should be changed to reflect this new allele status. The Committee agreed that the change of this significant null allele to low expression should be included in donor typing.

This proposal will not have any impact on Calculated Panel Reactive Antibody (CPRA), which is an algorithm used to determine what proportion of deceased donors a potential candidate may be immunologically incompatible with and therefore unable to accept organs from; in other words, how "sensitized" a candidate is.

[3] *Update Human Leukocyte Antigen (HLA) Equivalency Tables, 2023,* OPTN Histocompatibility Committee, July 2023, https://optn.transplant.hrsa.gov/policies-bylaws/public-comment/update-hla-equivalency-tables-2023/ (accessed May 9, 2025).

[4] Allele Report for C*04:09L, IMGT/HLA, https://www.ebi.ac.uk/ipd/imgt/hla/ (accessed May 16, 2025).

[5] Welters, C., et al. HLA-C*04:09N is expressed at the cell surface and triggers peptide-specific T-cell activation. Haematologica. 2023 Sept; 109(4): 1121-1127. doi: 10.3324/haematol.2023.283812. (accessed July 1, 2025).

Overview of Proposal

Addition of P-Groups to *Epitope based Unacceptable Antigen Assignment for DPB1*

The Committee proposes updating HLA-DPB1 to keep HLA typing and unacceptable antigens aligned with updated practices. The proposed changes update the available p-groups for Epitope based Unacceptable Antigen Assignment for DPB1 for OPTN Policy to be aligned with p-groups available in the IPD-IMGT/HLA version 3.52.0. This will take the p-groups that were added to policy in the *Update HLA Equivalency Tables, 2023* and assign them to their DP epitope equivalences. This update will encourage precise, multi-field typing. The Committee added p-groups to most tables in their previous table review. Later the Committee realized that entering a p-group typing would not translate to patients listed with incompatible DP epitopes, as the utilization of DP epitopes has been very low. Based on feedback from the histocompatibility community, the Committee found that the addition of these p-groups would allow for more detailed and accurate typing.

Adding further p-group level typing to the OPTN Computer System would facilitate more precise compatibility screening, potentially lowering the number of unexpected positive crossmatches, and thus lowering the risk of not being able to transplant an accepted organ. Incorporation of p-group level typing also helps to increase precision of HLA screening, allowing programs to better assess immunologic incompatibility of a donor organ with the potential candidate, which helps to avoid the risk of adverse post-transplant events such as acute or chronic rejection.

This proposal will update the values within the OPTN Computer System, but will not change the process for HLA typing, candidate screening, candidate Calculated Panel Reactive Antibody (CPRA), or the process for HLA matching for allocation. It will also ensure that the unacceptable antigen screening for candidates will appropriately exclude incompatible donors based on current p-group equivalences and epitopes.

Addition of C*04:09L to *HLA C Unacceptable Antigen Equivalences*

In January 2025, there was an allele update in the IMGT database, with C*04:09 moving from null (C*04:09N) to low expression (C*04:09L). The Committee received community feedback regarding potential confusion for this status change, as the allele's previous iteration, C*04:09N, was one of the most commonly listed null alleles[6], and community members felt that its new status should be recognized, as it now is an expressed allele. It will be added to *OPTN Policy 4.11.B: Table 4-7: HLA C Unacceptable Antigen Equivalencies.*

OPTN Management and Membership Policy E.8: Expedited Actions

The proposed changes to the HLA equivalency tables are eligible for expedited actions pursuant *to OPTN Policy 4.10: HLA Value Updates* and *OPTN Membership and Management Policy E.8: Expedited Actions*. The eligibility of *OPTN Policy 4.11: Reference Tables of HLA Antigen Values and Split Equivalences* for this

[6] Welters, C., et al. HLA-C*04:09N is expressed at the cell surface and triggers peptide-specific T-cell activation. Haematologica. 2023 Sept; 109(4): 1121-1127. doi: 10.3324/haematol.2023.283812. (accessed July 1, 2025).

pathway was approved in June 2020 by the OPTN Board of Directors (Board). The Committee must consider public comments and may recommend the final adoption of the proposal without requiring Board approval if the criteria are met. The proposal is not eligible for expedited action if five members of the general public, one OPTN Committee, or four members of the Board object to its use. In this case, the Committee will notify the Executive Committee that the proposal will switch to a typical policy development pathway. If no objections are raised during public comment, the proposal is eligible to become effective upon notice to OPTN members. If one or more objections are raised, but fewer than required to withdraw expedited action, the proposal may be submitted to the Board for final action.

NOTA and Final Rule Analysis

This project is authorized by NOTA, which states that the OPTN shall establish a "national system… to match organs and individuals included in the list, especially individuals whose immune system makes it difficult for them to receive organs."[7] Individuals whose immune system makes it difficult to receive organs need accurate assessment of their compatibility with a donor so they can have access to all safe matches. This project would increase the number of available p-groups and alleles for HLA typing. Unacceptable antigen screening allows for better assessment of a candidate's immunological compatibility with a potential donor. Additional HLA reporting benefits sensitized candidates the most.

This project is authorized by the OPTN Final Rule, which states that "[t]he OPTN Board of Directors shall be responsible for developing... [p]olicies for the equitable allocation of cadaveric organs in accordance with §121.8."[8] Policy additions reflect developments in the histocompatibility field. More granular HLA typing and unacceptable antigen screening capabilities will increase equity for highly sensitized candidates. These HLAs are used in order to match kidney and pancreas donors to candidates as well as screen immunologically incompatible candidates from match runs for all organs.

The OPTN Final Rule states that the OPTN shall "[m]aintain records of all transplant candidates, all organ donors and all transplant recipients."[9] This project will allow the OPTN to collect more complete and precise HLA data on donors and donor organs and maintain such data in the OPTN dataset.

The Final Rule requires that when developing policies for the equitable allocation of cadaveric organs, such policies must be developed "in accordance with §121.8," which requires that allocation policies "(1) Shall be based on sound medical judgment; (2) Shall seek to achieve the best use of donated organs; (3) Shall preserve the ability of a transplant program to decline an offer of an organ or not to use the organ for the potential recipient in accordance with §121.7(b)(4)(d) and (e); (4) Shall be specific for each organ type or combination of organ types to be transplanted into a transplant candidate; (5) Shall be designed to avoid wasting organs, to avoid futile transplants, to promote patient access to transplantation, and to promote the efficient management of organ placement;…(8) Shall not be based on the candidate's place of residence or place of listing, except to the extent required by paragraphs (a)(1)-(5) of this section."[10] This proposal:

- **Is based on sound medical judgment**[11] because it is an evidence-based change relying on peer-reviewed literature and the Committee's collective clinical experience. Additionally, the

[7] 42 USC §274(b)(2)(A)(ii).
[8] 42 CFR § 121.4(a)(1).
[9] 42 CFR § 121.11(a)(1)(ii).
[10] 42 CFR §121.8(a).
[11] 42 CFR §121.8(a)(1).

proposed changes were made to align the tables with the IMGT HLA Database. HLA value changes in this proposal use version 3.52.0.

- **Is designed to avoid futile transplants[12]:** This proposal allows for better assessment of transplant immunologic risk, benefiting post-transplant outcomes.
    - Proposed changes help to increase precision of HLA screening, allowing programs to better assess immunologic incompatibility of a donor organ with the potential candidate, which helps to avoid the risk of adverse post-transplant events such as acute or chronic rejection.
- **Is designed to…promote patient access to transplantation[13]** by giving similarly situated candidates equitable opportunities to receive an organ offer.
    - Highly sensitized candidates have a higher rate of incompatibility, and increased typing resolution allows physicians to better and more efficiently screen potential deceased donors for these candidates. Updates to increase the quality and efficiency of immunological screening for deceased donor organs may increase the quality and efficiency of immunological screening for deceased donor organs. This ensures that candidates with rarer HLA types, such as smaller minority groups, are not disadvantaged by the increased use of higher resolution HLA typing methodologies prior to deceased donor match runs.[14]
- **Is designed to avoid wasting organs[15]** by decreasing the number of organs recovered but not transplanted
    - Adding p-group level typing to the OPTN Computer System would facilitate more precise compatibility screening, potentially lowering the number of unexpected positive crossmatches, and thus lowering the risk of not being able to transplant an accepted organ.
- **Promotes the efficient management of organ placement[16]** by avoiding unexpected positive crossmatches.
    - Proposed changes help to increase the precision of HLA typings, allowing programs to better assess immunologic incompatibility of a donor organ with the potential candidate. This allows for a more precise HLA initial screening by programs, as well as a more precise automated HLA screening based on unacceptable antigens, helping avoid unexpected positive crossmatches.
- **Seeks to achieve the best use of donated organs[17]** by increasing donor screening to better assess transplant immunologic compatibility and better titrate post-transplant immunosuppression.
    - Proposed changes help to increase precision of HLA screening, allowing programs to better assess immunologic risk of the donor organ. This allows programs to better assess candidate suitability and titrate post-transplant immunosuppression, helping increase chances for long-term graft survival.
- **Is not based on a candidate's place of residence or place of listing except to the extent required by other regulatory requirements.[18]**

[12] 42 CFR §121.8(a)(5).
[13] Ibid.
[14] Courtwright, A. M., et al. Human leukocyte antigen antibody sensitization, lung transplantation, and health equity. American Journal of Transplantation. 2022, 22(3): 698-704. doi: doi.org/10.1111/ajt.16795.
[15] 42 CFR §121.8(a)(5).
[16] 42 CFR §121.8(a)(5).
[17] 42 CFR §121.8(a)(2).
[18] 42 CFR §121.8(a)(8).

- Increasing and updating the reportable HLA is not dependent on a candidate's place of residence or place of listing.

This proposal also preserves the ability of a transplant program to decline an offer or not use the organ for a potential recipient,[19] and it is specific to each organ type for which HLA reporting for donors and candidates is applicable.[20]

The OPTN Final Rule also requires the OPTN to consider **"whether to adopt transition procedures that would treat people on the waiting list and awaiting transplantation prior to the adoption or effective date of the revised policies no less favorably than they would have been treated under the previous policies."**[21] Upon consideration of whether there would be any populations treated less favorably, it was determined that the proposed changes will not affect any patient population more or less favorably when receiving organ offers. Candidate unacceptable antigen screening will be updated in line with current practice and current known immunocompatibility.

Implementation Considerations

Member and OPTN Operations

Operations affecting Histocompatibility Laboratories

Laboratories may need to update any Application Programming Interfaces (APIs) and Laboratory Informatics Systems (LISs) to reflect changes in this proposal.

Operations affecting Organ Procurement Organizations

OPOs may need to evaluate their agreements with histocompatibility laboratories to accommodate any needed transactional changes related to the proposal changes.

Operations affecting Transplant Hospitals

Transplant hospitals may need to evaluate their agreements with histocompatibility laboratories to accommodate any needed transactional changes related to the proposal changes.

Operations affecting the OPTN

This proposal will require IT implementation in the OPTN Computer System. Updates will be made to the system tables involving HLA and unacceptable antigen equivalences. Members will also receive notice prior to the policy changes being implemented in the system.

Potential Impact on Select Patient Populations

This proposal will most likely have a greater impact on women and minority candidates, whose HLA alleles may be more difficult to match, as incorporation of higher resolution HLA typings are most likely to impact highly sensitized candidates who are often women and minorities. Due to their levels of HLA sensitization, these candidates have a higher rate of incompatibility, and increased typing resolution

[19] 42 CFR §121.8(a)(3).
[20] 42 CFR §121.8(a)(4).
[21] 42 CFR §121.8(d)(1).

allows physicians to better and more efficiently screen potential deceased donors for these candidates. Increased quality and efficiency of immunological screening for deceased donor organs may lower the risk of unexpected positive crossmatches and allow programs to better assess candidate suitability and titrate post-transplant immunosuppression, helping increase chances for long-term graft survival.

Projected Fiscal Impact

The Fiscal Impact Advisory Group, comprised of representatives from histocompatibility laboratories, organ procurement organizations, and transplant hospitals, reviewed this proposal and completed a survey to estimate anticipated costs. They rated this project as low, medium, or high based on the estimated staffing and/or training, overtime, equipment, or IT support needed in the implementation of this proposal.

Overall Projected Fiscal Impact

The proposal is anticipated to have a low fiscal impact on histocompatibility labs. There is no expected fiscal impact for transplant programs or organ procurement organizations.

Projected Fiscal Impact on Organ Procurement Organizations

There is no expected fiscal impact on organ procurement organizations.

Projected Fiscal Impact on Transplant Hospitals

There is no expected fiscal impact on transplant programs.

Projected Fiscal Impact on Histocompatibility Laboratories

There is low expected fiscal impact on histocompatibility laboratories, including minimal staff retraining. Histocompatibility laboratories may incur minimal costs associated with upgrades to existing computer systems and APIs.

Projected Fiscal Impact on the OPTN

It is estimated that $(redacted) will be needed to implement this proposal. Implementation would involve updates to the OPTN Computer System that include building and updating forms, modifying reporting tools, and testing to support the proposed changes. Implementation will also include education, communication, and outreach to the community regarding these changes. It is estimated that $(redacted) will be needed for ongoing support. Ongoing support includes member support and system maintenance. The total estimate for implementation and ongoing support is $(redacted).[22]

[22] Resource estimates are calculated by the current contractor for that contractor to perform the work. Estimates are subject to change depending on a number of factors, including which OPTN contractor(s) will be performing the work, if the project is ultimately approved. Resource estimates are exempted from public disclosure under the Freedom of Information Act exemption 4.

Post-implementation Monitoring

Member Compliance

The Final Rule requires that allocation policies "include appropriate procedures to promote and review compliance including, to the extent appropriate, prospective and retrospective reviews of each transplant program's application of the policies to patients listed or proposed to be listed at the program."[23]

The proposed language will not change the current routine monitoring of OPTN members. Any data entered in the OPTN Computer System may be reviewed by the OPTN, and members are required to provide documentation as requested.

Policy Evaluation

The OPTN Final Rule requires that allocation policies "be reviewed periodically and revised as appropriate."[24]

The committee intends that through this policy change, there will be additional adoption of the utilization of p-groups in typing after their addition, as well as notable reporting of C*04:09L. The following metrics, and any others subsequently requested by the Committee, will be evaluated as data become available to compare reporting before and after the implementation of this policy:

1. Utilization of p-group typing in HLA Typing and Unacceptable Antigen assignment for DPB1
2. Reporting of C*04:09L in HLA Typing

These metrics are similar to already planned monitoring of the 2023 HLA Equivalency tables updates and will be rolled into the monitoring of that policy.

Conclusion

The Committee conducted their required annual review of the HLA equivalency tables and identified the following changes needed as proposed:

- The Committee will be adding necessary p-values to *OPTN Policy 4.11.B: Table 4-16: Epitope based Unacceptable Antigen Assignment for DPB1* based on the IMGT information system release at time of creation for the *Update HLA Equivalency Tables, 2023* proposal. This policy proposes taking the p-groups that were added to policy in the *Update HLA Equivalency Tables, 2023* and assigning them to their DP epitope equivalences.
- This update adds C*04:09L to *OPTN Policy 4.11.B: Table 4-7: HLA C Unacceptable Antigen Equivalences*, which aligns with the IMGT information system change of the allele from null to low expression. This will make a change to donor typing, aligning this value with the newest IMGT updates.

The Committee is proposing to use the expedited actions pathway for these updates, pursuant to *OPTN Policy 4.10: HLA Value Updates* and *OPTN Management and Membership Policy E.8.: Expedited Actions*.

[23] 42 CFR §121.8(a)(7).
[24] 42 CFR §121.8(a)(6).

Considerations for the Community

The Committee is requesting public comment feedback, including input on the following questions:

- Does the proposed crosswalk cover the recognized DP epitopes within the DPB1 p-groups in the HLA table?
- Are there recommendations for changes to instructions in unacceptable antigen listing or donor HLA typing that would improve the efficacy and equity of allocation in the OPTN Computer System?

Policy Language

Proposed new language is underlined (<u>example</u>) and language that is proposed for removal is struck through (~~example~~). Heading numbers, table and figure captions, and cross-references affected by the numbering of these policies will be updated as necessary.

4.11 Reference Tables of HLA Antigen Values and Split Equivalences

4.11.A: HLA Matching Equivalences

Tables 4-2, 4-3, and 4-4 show candidate-donor antigen equivalencies. All of the candidate and donor antigens that are considered equivalent to each other for the purposes of HLA matching are listed within each row. All other combinations are considered mismatches for the purposes of HLA matching.

…

Table 4-7: HLA C Unacceptable Antigen Equivalences

If this C-Locus Unacceptable Antigen is reported:	The following HLA values are considered equivalent to the reported unacceptable antigen:
01	01, 01:02P, 01:02, 01:03P, 01:03, 01:63P
01:02	01:02
01:03	01:03
02	02, 02:02P, 02:02, 02:10, 02:14P, 02:16P, 02:134P, 02:159P, 02:182P
02:02	02:02
02:10	02:10
03	03, 03:02P, 03:02, 03:03P, 03:03, 03:04P, 03:04, 03:05P, 03:05, 03:06, 03:14P, 03:40P, 09, 10
03:02	03:02
03:03	03:03
03:04	03:04
03:05	03:05
03:06	03:06
04	04, 04:01P, 04:01, 04:03P, 04:03, 04:04, 04:06P, 04:07, <u>04:09L</u>, 04:10P, 04:59P, 04:355P, 04:360P
04:01	04:01
04:03	04:03
04:04	04:04
04:07	04:07
05	05, 05:01P, 05:01
05:01	05:01
06	06, 06:02P, 06:02, 06:06P, 06:87P
06:02	06:02
07	07, 07:01P, 07:01, 07:02P, 07:02, 07:04P, 07:04, 07:06, 07:18, 07:19P, 07:22P, 07:26P, 07:27P, 07:28P, 07:165P, 07:450P, 07:919P
07:01	07:01
07:02	07:02
07:04	07:04
07:06	07:06

If this C-Locus Unacceptable Antigen is reported:	The following HLA values are considered equivalent to the reported unacceptable antigen:
07:18	07:18
08	08, 08:01P, 08:01, 08:02P, 08:02, 08:03P, 08:03, 08:04
08:01	08:01
08:02	08:02
08:03	08:03
08:04	08:04
09	09, 03:03P, 03:03
10	10, 03:02P, 03:02, 03:04P, 03:04, 03:06
12	12, 12:02P, 12:02, 12:03P, 12:03, 12:04, 12:14P
12:02	12:02
12:03	12:03
12:04	12:04
14	14, 14:02P, 14:02, 14:03P, 14:03
14:02	14:02
14:03	14:03
15	15, 15:02P, 15:02, 15:04P, 15:04, 15:05P, 15:05, 15:06, 15:09, 15:103P
15:02	15:02
15:04	15:04
15:05	15:05
15:06	15:06
15:09	15:09
16	16, 16:01P, 16:01, 16:02P, 16:02, 16:04, 16:15P
16:01	16:01
16:02	16:02
16:04	16:04
17	17, 17:01P, 17:01, 17:03
17:01	17:01
17:03	17:03
18	18, 18:01P, 18:01, 18:02
18:01	18:01
18:02	18:02

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Table 4-16: Epitope based Unacceptable Antigen Assignment for DPB1

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
55AAE	01:01	04:01	11:01	13:01	15:01	23:01	26:01	27:01
	31:01	33:01	34:01	39:01	40:01	52:01	55:01	56:01
	58:01	62:01	63:01	65:01	66:01	67:01	71:01	72:01
	74:01	85:01	87:01	89:01	90:01	95:01	96:01	99:01
	102:01	103:01	107:01	110:01	112:01	117:01	118:01	121:01
	125:01	126:01	127:01	128:01	133:01	134:01	138:01	142:01
	147:01	149:01	150:01	158:01	160:01	162:01	169:01	173:01
	174:01	175:01	176:01	177:01	178:01	179:01	180:01	181:01
	192:01	193:01	194:01	195:01	199:01	201:01	202:01	206:01
	207:01	209:01	212:01	213:01	220:01	224:01	225:01	227:01
	228:01	230:01	231:01	232:01	240:01	244:01	246:01	247:01
	250:01	253:01	255:01	262:01	264:01	267:01	268:01	272:01
	275:01	276:01	278:01	279:01	280:01	281:01	282:01	283:01
	290:01	294:01	295:01	298:01	299:01	303:01	304:01	305:01
	306:01	314:01	318:01	319:01	320:01	322:01	323:01	325:01
	326:01	327:01	333:01	334:01	335:01	336:01	340:01	341:01
	345:01	346:01	348:01	350:01	353:01	354:01	356:01	360:01
	362:01	370:01	371:01	372:01	375:01	376:01	377:01	378:01
	387:01	388:01	389:01	392:01	393:01	396:01	397:01	398:01
	399:01	411:01	412:01	415:01	417:01	418:01	425:01	426:01
	428:01	434:01	435:01	436:01	437:01	438:01	440:01	449:01
	451:01	453:01	454:01	456:01	458:01	459:01	462:01	464:01
	465:01	468:01	471:01	474:01	475:01	476:01	479:01	480:01
	481:01	482:01	483:01	485:01	486:01	487:01	490:01	493:01
	497:01	500:01	503:01	512:01	516:01	517:01	518:01	519:01
	520:01	521:01	522:01	523:01	524:01	529:01	531:01	534:01
	538:01	542:01	543:01	544:01	553:01	554:01	556:01	559:01
	561:01	562:01	563:01	564:01	565:01	569:01	575:01	576:01
	578:01	580:01	583:01	584:01	585:01	591:01	592:01	593:01
	597:01	599:01	600:01	607:01	609:01	612:01	614:01	615:01
	616:01	618:01	623:01	625:01	626:01	631:01	632:01	634:01
	635:01	636:01	643:01	644:01	649:01	654:01	658:01	666:01
	667:01	670:01	672:01	677:01	679:01	682:01	683:01	686:01
	687:01	694:01	695:01	699:01	702:01	703:01	707:01	708:01
	709:01	713:01	716:01	722:01	733:01	739:01	742:01	745:01
	747:01	749:01	750:01	753:01	755:01	757:01	758:01	761:01
	765:01	767:01	768:01	769:01	772:01	773:01	784:01	787:01
	788:01	789:01	795:01	803:01	804:01	806:01	807:01	808:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
55AAE	810:01	811:01	812:01	813:01	814:01	820:01	822:01	824:01
	826:01	828:01	830:01	835:01	837:01	840:01	842:01	849:01
	850:01	852:01	853:01	856:01	859:01	879:01	880:01	882:01
	888:01	893:01	895:01	896:01	901:01	904:01	907:01	908:01
	910:01	912:01	913:01	915:01	916:01	921:01	922:01	924:01
	926:01	930:01	931:01	932:01	934:01	937:01	945:01	947:01
	953:01	957:01	966:01	969:01	972:01	976:01	978:01	979:01
	988:01	989:01	991:01	992:01	993:01	996:01	997:01	998:01
	999:01	1001:01	1002:01	1003:01	1004:01	1010:01	1011:01	1012:01
	1016:01	1023:01	1024:01	1033:01	1034:01	1038:01	1040:01	1042:01
	1046:01	1048:01	1050:01	1054:01	1057:01	1060:01	1062:01	1063:01
	1064:01	1065:01	1066:01	1068:01	1069:01	1073:01	1074:01	1076:01
	1078:01	1080:01	1081:01	1086:01	1088:01	1091:01	1097:01	1100:01
	1105:01	1108:01	1109:01	1113:01	1122:01	1123:01	1129:01	1131:01
	1132:01	1137:01	1138:01	1139:01	1141:01	1144:01	1145:01	1146:01
	1147:01	1148:01	1151:01	1152:01	1155:01	1161:01	1162:01	1164:01
	1166:01	1167:01	1170:01	1173:01	1177:01	1181:01	1183:01	1184:01
	1185:01	1192:01	1195:01	1196:01	1204:01	1205:01	1206:01	1207:01
	1208:01	1212:01	1214:01	1215:01	1216:01	1217:01	1218:01	1220:01
	1221:01	1222:01	1225:01	1226:01	1231:01	1232:01	1234:01	1237:01
	1238:01	1241:01	1242:01	1244:01	1249:01	1250:01	1252:01	1262:01
	1264:01	1268:01	1271:01	1274:01	1277:01	1284:01	1287:01	1292:01
	1294:01	1297:01	1300:01	1301:01	1304:01	1306:01	1308:01	1309:01
	1310:01	1314:01	1316:01	1317:01	1321:01	1322:01	1327:01	1328:01
	1329:01	1333:01	1336:01	1337:01	1341:01	1342:01	1343:01	1345:01
	1353:01	1356:01	1358:01	1361:01	1362:01	1370:01	1374:01	1377:01
	1379:01	1385:01	1387:01	1390:01	1391:01	1392:01	1399:01	1406:01
	1409:01	1412:01	1413:01	1420:01	1421:01	1427:01	1433:01	1434:01
	1436:01	1441:01	1443:01	1444:01	1446:01	1447:01	1450:01	1451:01
	1453:01	1454:01	1459:01	1464:01	1465:01	1472:01	1476:01	01:01P
	04:01P	11:01P	13:01P	15:01P	23:01P	26:01P	31:01P	34:01P
	39:01P	40:01P	55:01P	85:01P	90:01P	398:01P		
55DED	03:01	06:01	09:01	14:01	17:01	20:01	29:01	35:01
	44:01	46:01	50:01	57:01	69:01	70:01	76:01	78:01
	80:01	86:01	88:01	91:01	92:01	98:01	104:01	108:01
	111:01	119:01	124:01	130:01	131:01	132:01	152:01	156:01
	157:01	164:01	166:01	168:01	182:01	197:01	203:01	205:01
	208:01	214:01	221:01	222:01	234:01	235:01	241:01	242:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
55DED	243:01	245:01	248:01	249:01	251:01	259:01	266:01	270:01
	287:01	288:01	289:01	292:01	293:01	329:01	332:01	343:01
	351:01	355:01	361:01	363:01	379:01	383:01	384:01	385:01
	386:01	391:01	394:01	404:01	405:01	407:01	409:01	413:01
	439:01	442:01	445:01	446:01	447:01	460:01	472:01	484:01
	491:01	492:01	498:01	504:01	505:01	506:01	508:01	509:01
	530:01	536:01	540:01	541:01	545:01	546:01	548:01	555:01
	566:01	567:01	568:01	572:01	581:01	601:01	610:01	613:01
	620:01	621:01	629:01	630:01	645:01	648:01	651:01	662:01
	664:01	669:01	671:01	675:01	676:01	684:01	688:01	689:01
	698:01	704:01	705:01	706:01	714:01	719:01	727:01	728:01
	737:01	760:01	762:01	797:01	801:01	815:01	829:01	833:01
	834:01	839:01	846:01	854:01	855:01	883:01	899:01	905:01
	906:01	909:01	914:01	920:01	935:01	938:01	944:01	946:01
	948:01	949:01	952:01	956:01	970:01	977:01	983:01	987:01
	990:01	994:01	1000:01	1009:01	1014:01	1017:01	1021:01	1022:01
	1027:01	1030:01	1032:01	1043:01	1047:01	1049:01	1052:01	1067:01
	1071:01	1087:01	1090:01	1093:01	1103:01	1104:01	1111:01	1114:01
	1116:01	1125:01	1127:01	1128:01	1130:01	1134:01	1149:01	1157:01
	1158:01	1174:01	1178:01	1182:01	1187:01	1203:01	1211:01	1233:01
	1245:01	1246:01	1251:01	1254:01	1258:01	1259:01	1263:01	1265:01
	1278:01	1295:01	1303:01	1311:01	1313:01	1330:01	1339:01	1340:01
	1348:01	1354:01	1355:01	1359:01	1365:01	1366:01	1367:01	1373:01
	1378:01	1382:01	1384:01	1388:01	1389:01	1394:01	1395:01	1396:01
	1397:01	1401:01	1407:01	1411:01	1414:01	1418:01	1422:01	1426:01
	1429:01	1431:01	1432:01	1435:01	1448:01	1452:01	1458:01	1466:01
	1467:01	1471:01	1474:01	1475:01	1480:01	03:01P	06:01P	09:01P
	14:01P	17:01P	20:01P	29:01P	57:01P	80:01P	130:01P	132:01P
	152:01P							
55DEE	02:01	04:02	08:01	10:01	16:01	18:01	25:01	28:01
	37:01	41:01	45:01	48:01	49:01	51:01	53:01	59:01
	60:01	68:01	73:01	75:01	77:01	79:01	81:01	82:01
	83:01	93:01	94:01	105:01	109:01	113:01	115:01	116:01
	122:01	123:01	129:01	136:01	137:01	141:01	143:01	144:01
	145:01	146:01	151:01	153:01	155:01	163:01	165:01	167:01
	172:01	183:01	184:01	185:01	186:01	187:01	188:01	191:01
	196:01	198:01	200:01	204:01	210:01	211:01	189:01	217:01
	219:01	229:01	236:01	237:01	238:01	239:01	252:01	256:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:
55DEE	257:01 258:01 260:01 261:01 263:01 265:01 269:01 271:01 273:01 274:01 277:01 285:01 286:01 296:01 297:01 307:01 308:01 309:01 310:01 311:01 312:01 313:01 316:01 321:01 324:01 338:01 339:01 342:01 344:01 347:01 349:01 352:01 359:01 364:01 365:01 366:01 367:01 368:01 369:01 373:01 374:01 380:01 381:01 402:01 410:01 414:01 416:01 419:01 420:01 421:01 422:01 423:01 424:01 429:01 430:01 431:01 432:01 433:01 441:01 443:01 444:01 448:01 452:01 457:01 461:01 463:01 466:01 467:01 469:01 470:01 477:01 488:01 489:01 494:01 499:01 501:01 502:01 510:01 511:01 513:01 514:01 515:01 525:01 526:01 528:01 532:01 537:01 539:01 549:01 552:01 557:01 571:01 574:01 577:01 579:01 582:01 586:01 594:01 595:01 596:01 602:01 603:01 604:01 606:01 608:01 617:01 622:01 624:01 627:01 628:01 633:01 637:01 639:01 640:01 641:01 646:01 647:01 650:01 652:01 653:01 655:01 656:01 659:01 660:01 663:01 665:01 673:01 674:01 678:01 680:01 681:01 685:01 690:01 692:01 701:01 711:01 723:01 725:01 726:01 730:01 731:01 734:01 735:01 736:01 740:01 741:01 751:01 752:01 759:01 763:01 770:01 771:01 774:01 775:01 776:01 780:01 781:01 782:01 783:01 791:01 799:01 805:01 809:01 816:01 817:01 818:01 819:01 823:01 827:01 832:01 836:01 841:01 843:01 845:01 857:01 858:01 861:01 863:01 864:01 881:01 884:01 885:01 886:01 887:01 889:01 890:01 891:01 892:01 897:01 898:01 900:01 902:01 903:01 918:01 927:01 933:01 936:01 940:01 942:01 943:01 954:01 955:01 958:01 963:01 964:01 967:01 968:01 973:01 975:01 981:01 1005:01 1006:01 1007:01 1013:01 1020:01 1025:01 1028:01 1031:01 1035:01 1036:01 1037:01 1039:01 1051:01 1053:01 1055:01 1056:01 1059:01 1072:01 1075:01 1077:01 1082:01 1083:01 1085:01 1089:01 1092:01 1094:01 1102:01 1106:01 1107:01 1110:01 1115:01 1124:01 1126:01 1136:01 1140:01 1142:01 1150:01 1153:01 1159:01 1160:01 1163:01 1165:01 1168:01 1171:01 1175:01 1176:01 1179:01 1194:01 1197:01 1198:01 1200:01 1201:01 1210:01 1219:01 1224:01 1227:01 1230:01 1235:01 1236:01 1239:01 1243:01 1247:01 1248:01 1253:01 1261:01 1266:01 1267:01 1270:01 1276:01 1280:01 1281:01 1283:01 1286:01 1290:01 1296:01 1298:01 1307:01 1312:01 1315:01 1319:01 1320:01 1323:01 1324:01 1326:01 1331:01 1335:01 1344:01 1346:01 1347:01 1352:01 1360:01 1363:01 1368:01 1369:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
55DEE	1371:01	1372:01	1380:01	1381:01	1383:01	1386:01	1393:01	1402:01
	1404:01	1405:01	1408:01	1410:01	1417:01	1419:01	1424:01	1425:01
	1445:01	1456:01	1460:01	1461:01	1468:01	1469:01	1470:01	1479:01
	02:01P	04:02P	10:01P	16:01P	18:01P	25:01P	28:01P	45:01P
	51:01P	59:01P	81:01P	137:01P	184:01P	1371:01P		
55EAE	02:02	05:01	19:01	21:01	22:01	24:01	30:01	36:01
	38:01	47:01	54:01	97:01	100:01	101:01	106:01	114:01
	135:01	139:01	140:01	170:01	171:01	223:01	226:01	233:01
	284:01	291:01	300:01	301:01	302:01	317:01	330:01	331:01
	337:01	358:01	390:01	395:01	400:01	406:01	408:01	473:01
	478:01	495:01	496:01	527:01	533:01	535:01	547:01	550:01
	558:01	560:01	573:01	587:01	588:01	589:01	590:01	611:01
	619:01	638:01	668:01	697:01	715:01	717:01	718:01	720:01
	721:01	729:01	744:01	746:01	764:01	766:01	778:01	779:01
	785:01	790:01	798:01	802:01	847:01	848:01	851:01	860:01
	923:01	928:01	929:01	951:01	961:01	962:01	965:01	971:01
	980:01	982:01	1008:01	1015:01	1018:01	1019:01	1026:01	1061:01
	1095:01	1099:01	1101:01	1117:01	1118:01	1119:01	1120:01	1143:01
	1156:01	1172:01	1180:01	1186:01	1188:01	1189:01	1190:01	1199:01
	1209:01	1213:01	1229:01	1240:01	1255:01	1257:01	1272:01	1273:01
	1282:01	1289:01	1293:01	1302:01	1318:01	1349:01	1376:01	1400:01
	1403:01	1428:01	1437:01	1438:01	1457:01	1462:01	1473:01	1477:01
	1481:01	1483:01	02:02P	05:01P	19:01P	21:01P	22:01P	38:01P
	100:01P	233:01P						
84DEAV	01:01	03:01	05:01	06:01	08:01	09:01	10:01	11:01
	13:01	14:01	16:01	17:01	19:01	20:01	21:01	22:01
	25:01	26:01	27:01	29:01	30:01	31:01	35:01	36:01
	37:01	38:01	44:01	45:01	50:01	52:01	54:01	55:01
	56:01	57:01	58:01	63:01	65:01	67:01	68:01	69:01
	70:01	76:01	78:01	79:01	84:01	85:01	87:01	88:01
	89:01	90:01	91:01	92:01	93:01	97:01	98:01	102:01
	103:01	104:01	106:01	107:01	110:01	111:01	114:01	118:01
	122:01	124:01	125:01	127:01	130:01	131:01	132:01	133:01
	135:01	136:01	137:01	140:01	142:01	147:01	150:01	152:01
	156:01	157:01	162:01	165:01	166:01	167:01	168:01	170:01
	171:01	173:01	182:01	184:01	197:01	201:01	202:01	203:01
	204:01	205:01	206:01	207:01	208:01	209:01	220:01	221:01
	222:01	223:01	226:01	234:01	241:01	243:01	244:01	245:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
84DEAV	246:01	247:01	248:01	249:01	250:01	251:01	259:01	264:01
	265:01	266:01	267:01	268:01	269:01	270:01	277:01	284:01
	285:01	287:01	288:01	289:01	291:01	293:01	295:01	300:01
	301:01	304:01	305:01	312:01	313:01	314:01	315:01	316:01
	317:01	324:01	325:01	326:01	327:01	329:01	331:01	337:01
	340:01	343:01	346:01	348:01	349:01	351:01	353:01	358:01
	361:01	362:01	363:01	370:01	371:01	379:01	383:01	384:01
	385:01	386:01	388:01	389:01	390:01	391:01	393:01	394:01
	395:01	398:01	400:01	404:01	405:01	407:01	408:01	409:01
	410:01	411:01	412:01	413:01	417:01	422:01	437:01	438:01
	439:01	442:01	445:01	446:01	447:01	448:01	449:01	458:01
	460:01	462:01	466:01	470:01	472:01	473:01	481:01	483:01
	490:01	491:01	492:01	495:01	498:01	503:01	504:01	505:01
	506:01	509:01	514:01	515:01	516:01	517:01	518:01	519:01
	527:01	530:01	532:01	533:01	535:01	536:01	538:01	541:01
	542:01	543:01	545:01	548:01	550:01	552:01	558:01	560:01
	562:01	563:01	564:01	565:01	566:01	567:01	568:01	572:01
	573:01	587:01	588:01	597:01	599:01	600:01	608:01	609:01
	610:01	611:01	612:01	613:01	616:01	619:01	621:01	623:01
	629:01	630:01	631:01	632:01	633:01	634:01	635:01	636:01
	638:01	645:01	648:01	649:01	650:01	651:01	652:01	653:01
	654:01	662:01	664:01	667:01	668:01	669:01	671:01	672:01
	673:01	675:01	676:01	684:01	688:01	689:01	698:01	703:01
	704:01	705:01	706:01	707:01	708:01	709:01	710:01	711:01
	713:01	714:01	715:01	716:01	717:01	718:01	720:01	727:01
	728:01	729:01	733:01	737:01	744:01	746:01	749:01	760:01
	764:01	778:01	785:01	789:01	790:01	791:01	797:01	798:01
	801:01	802:01	807:01	810:01	815:01	822:01	825:01	829:01
	832:01	833:01	834:01	839:01	846:01	847:01	848:01	851:01
	853:01	854:01	855:01	856:01	860:01	864:01	879:01	883:01
	886:01	888:01	891:01	892:01	893:01	898:01	899:01	901:01
	902:01	904:01	905:01	906:01	907:01	908:01	909:01	912:01
	914:01	920:01	922:01	923:01	924:01	929:01	930:01	931:01
	935:01	937:01	938:01	940:01	944:01	945:01	946:01	947:01
	948:01	949:01	951:01	952:01	953:01	956:01	965:01	968:01
	969:01	970:01	971:01	976:01	977:01	979:01	980:01	982:01
	983:01	990:01	991:01	994:01	996:01	998:01	999:01	1000:01
	1006:01	1007:01	1008:01	1009:01	1012:01	1014:01	1015:01	1017:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
84DEAV	1018:01	1019:01	1021:01	1022:01	1024:01	1026:01	1027:01	1030:01
	1032:01	1034:01	1038:01	1043:01	1047:01	1049:01	1050:01	1052:01
	1057:01	1058:01	1061:01	1063:01	1065:01	1067:01	1068:01	1069:01
	1071:01	1073:01	1076:01	1087:01	1088:01	1090:01	1093:01	1095:01
	1096:01	1099:01	1101:01	1103:01	1105:01	1111:01	1114:01	1116:01
	1117:01	1118:01	1119:01	1120:01	1123:01	1125:01	1126:01	1127:01
	1128:01	1130:01	1131:01	1133:01	1134:01	1137:01	1140:01	1141:01
	1143:01	1145:01	1147:01	1149:01	1150:01	1151:01	1156:01	1157:01
	1158:01	1162:01	1166:01	1168:01	1170:01	1172:01	1178:01	1180:01
	1182:01	1183:01	1185:01	1186:01	1187:01	1189:01	1190:01	1199:01
	1203:01	1204:01	1205:01	1211:01	1213:01	1224:01	1229:01	1232:01
	1233:01	1234:01	1240:01	1245:01	1246:01	1251:01	1254:01	1255:01
	1257:01	1258:01	1259:01	1261:01	1263:01	1264:01	1265:01	1272:01
	1273:01	1278:01	1281:01	1282:01	1287:01	1289:01	1293:01	1294:01
	1295:01	1302:01	1303:01	1305:01	1306:01	1310:01	1311:01	1313:01
	1314:01	1318:01	1329:01	1330:01	1333:01	1339:01	1340:01	1341:01
	1342:01	1348:01	1349:01	1353:01	1354:01	1355:01	1359:01	1361:01
	1365:01	1366:01	1367:01	1370:01	1378:01	1382:01	1384:01	1386:01
	1388:01	1389:01	1392:01	1394:01	1395:01	1396:01	1397:01	1400:01
	1401:01	1406:01	1407:01	1411:01	1414:01	1418:01	1421:01	1426:01
	1429:01	1431:01	1432:01	1435:01	1438:01	1441:01	1443:01	1448:01
	1451:01	1452:01	1457:01	1458:01	1462:01	1464:01	1466:01	1467:01
	1469:01	1470:01	1471:01	1473:01	1475:01	1477:01	1480:01	1481:01
	01:01P	03:01P	05:01P	06:01P	09:01P	10:01P	11:01P	13:01P
	14:01P	16:01P	17:01P	19:01P	20:01P	21:01P	22:01P	25:01P
	26:01P	29:01P	31:01P	38:01P	45:01P	55:01P	57:01P	85:01P
	90:01P	130:01P	132:01P	137:01P	152:01P	184:01P	398:01P	1096:01P
84GGPM	02:01	02:02	04:01	04:02	23:01	24:01	32:01	33:01
	39:01	41:01	46:01	47:01	48:01	49:01	51:01	59:01
	60:01	66:01	71:01	72:01	73:01	75:01	77:01	80:01
	81:01	82:01	83:01	86:01	94:01	95:01	96:01	99:01
	100:01	101:01	105:01	108:01	109:01	112:01	113:01	115:01
	116:01	117:01	121:01	123:01	126:01	128:01	129:01	134:01
	138:01	141:01	143:01	144:01	145:01	146:01	148:01	149:01
	151:01	153:01	155:01	158:01	163:01	164:01	169:01	172:01
	174:01	175:01	176:01	179:01	180:01	181:01	183:01	185:01
	186:01	187:01	188:01	190:01	191:01	192:01	193:01	194:01
	195:01	196:01	199:01	200:01	210:01	211:01	212:01	213:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
84GGPM	189:01	214:01	215:01	217:01	219:01	224:01	225:01	227:01
	228:01	229:01	231:01	232:01	233:01	235:01	236:01	237:01
	238:01	239:01	240:01	252:01	253:01	254:01	255:01	256:01
	257:01	258:01	260:01	261:01	262:01	263:01	271:01	272:01
	273:01	274:01	275:01	276:01	278:01	281:01	282:01	283:01
	286:01	294:01	297:01	298:01	302:01	303:01	306:01	307:01
	308:01	309:01	310:01	311:01	318:01	319:01	320:01	321:01
	322:01	323:01	332:01	334:01	335:01	336:01	338:01	339:01
	341:01	342:01	344:01	350:01	352:01	354:01	355:01	356:01
	359:01	360:01	364:01	365:01	366:01	367:01	368:01	369:01
	372:01	373:01	374:01	375:01	376:01	377:01	378:01	380:01
	381:01	392:01	396:01	397:01	399:01	402:01	406:01	414:01
	415:01	416:01	418:01	419:01	420:01	421:01	423:01	424:01
	425:01	426:01	427:01	428:01	429:01	430:01	432:01	433:01
	434:01	435:01	440:01	441:01	443:01	444:01	451:01	452:01
	453:01	456:01	457:01	459:01	461:01	463:01	464:01	465:01
	468:01	469:01	474:01	475:01	476:01	477:01	478:01	479:01
	480:01	485:01	486:01	487:01	488:01	494:01	496:01	497:01
	500:01	501:01	502:01	508:01	510:01	511:01	520:01	521:01
	522:01	523:01	524:01	525:01	528:01	529:01	531:01	534:01
	537:01	539:01	540:01	547:01	549:01	553:01	554:01	555:01
	556:01	557:01	559:01	561:01	569:01	571:01	574:01	575:01
	576:01	577:01	578:01	579:01	581:01	582:01	583:01	584:01
	586:01	591:01	593:01	594:01	595:01	596:01	601:01	602:01
	603:01	604:01	605:01	606:01	607:01	614:01	615:01	617:01
	618:01	620:01	622:01	624:01	625:01	626:01	627:01	628:01
	637:01	639:01	640:01	641:01	642:01	643:01	646:01	647:01
	655:01	656:01	658:01	659:01	660:01	663:01	665:01	666:01
	670:01	674:01	677:01	678:01	679:01	680:01	681:01	682:01
	683:01	685:01	686:01	687:01	690:01	692:01	694:01	699:01
	701:01	702:01	721:01	722:01	723:01	725:01	726:01	730:01
	731:01	734:01	735:01	736:01	739:01	741:01	742:01	747:01
	750:01	751:01	753:01	755:01	757:01	758:01	759:01	761:01
	762:01	763:01	765:01	766:01	767:01	769:01	770:01	771:01
	772:01	773:01	774:01	775:01	776:01	779:01	780:01	781:01
	782:01	783:01	784:01	787:01	788:01	795:01	796:01	799:01
	803:01	804:01	805:01	806:01	808:01	809:01	811:01	812:01
	813:01	814:01	816:01	817:01	818:01	819:01	820:01	823:01

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:
84GGPM	824:01 826:01 827:01 828:01 830:01 836:01 837:01 840:01 841:01 842:01 843:01 845:01 849:01 850:01 852:01 857:01 858:01 859:01 861:01 863:01 880:01 881:01 882:01 884:01 885:01 887:01 889:01 890:01 895:01 915:01 916:01 921:01 926:01 927:01 928:01 932:01 933:01 934:01 936:01 943:01 954:01 955:01 957:01 958:01 961:01 962:01 963:01 964:01 966:01 967:01 972:01 973:01 975:01 978:01 981:01 987:01 988:01 989:01 992:01 993:01 997:01 1001:01 1002:01 1003:01 1004:01 1005:01 1010:01 1011:01 1013:01 1016:01 1020:01 1023:01 1025:01 1028:01 1031:01 1033:01 1035:01 1036:01 1037:01 1039:01 1040:01 1042:01 1046:01 1048:01 1051:01 1053:01 1055:01 1056:01 1059:01 1060:01 1062:01 1064:01 1066:01 1072:01 1074:01 1075:01 1077:01 1080:01 1081:01 1082:01 1083:01 1085:01 1086:01 1089:01 1091:01 1094:01 1097:01 1100:01 1102:01 1104:01 1106:01 1108:01 1110:01 1113:01 1115:01 1122:01 1124:01 1129:01 1132:01 1138:01 1139:01 1144:01 1146:01 1148:01 1152:01 1153:01 1155:01 1159:01 1160:01 1161:01 1163:01 1164:01 1167:01 1171:01 1173:01 1174:01 1175:01 1176:01 1177:01 1179:01 1181:01 1184:01 1188:01 1194:01 1195:01 1196:01 1197:01 1198:01 1200:01 1206:01 1207:01 1208:01 1209:01 1210:01 1212:01 1214:01 1215:01 1216:01 1217:01 1218:01 1220:01 1221:01 1222:01 1223:01 1225:01 1226:01 1227:01 1230:01 1231:01 1235:01 1237:01 1238:01 1239:01 1241:01 1242:01 1243:01 1244:01 1247:01 1248:01 1249:01 1253:01 1262:01 1266:01 1267:01 1268:01 1270:01 1271:01 1274:01 1276:01 1280:01 1283:01 1284:01 1290:01 1292:01 1297:01 1298:01 1300:01 1301:01 1304:01 1307:01 1308:01 1309:01 1312:01 1315:01 1316:01 1317:01 1320:01 1321:01 1322:01 1323:01 1326:01 1327:01 1328:01 1331:01 1335:01 1337:01 1343:01 1344:01 1345:01 1346:01 1347:01 1352:01 1356:01 1358:01 1360:01 1362:01 1363:01 1368:01 1369:01 1371:01 1372:01 1374:01 1376:01 1377:01 1379:01 1380:01 1381:01 1383:01 1385:01 1387:01 1390:01 1391:01 1393:01 1399:01 1402:01 1403:01 1404:01 1405:01 1408:01 1409:01 1410:01 1412:01 1413:01 1417:01 1419:01 1420:01 1424:01 1425:01 1428:01 1433:01 1436:01 1437:01 1444:01 1445:01 1446:01 1447:01 1450:01 1453:01 1454:01 1456:01 1459:01 1460:01 1461:01 1465:01 1468:01 1472:01 1474:01 1476:01 1479:01 1483:01 02:01P 02:02P 04:01P 04:02P 23:01P 39:01P 51:01P 59:01P 80:01P 81:01P 100:01P 233:01P 1371:01P

If this Candidate Unacceptable Epitope is reported:	The following HLA values are considered equivalent to the reported unacceptable epitope:							
84VGPM	15:01	18:01	28:01	34:01	40:01	53:01	62:01	74:01
	139:01	198:01	290:01	292:01	296:01	299:01	333:01	345:01
	347:01	387:01	471:01	482:01	484:01	493:01	499:01	512:01
	526:01	580:01	585:01	644:01	695:01	745:01	752:01	768:01
	835:01	896:01	897:01	900:01	903:01	910:01	913:01	918:01
	942:01	1054:01	1109:01	1136:01	1142:01	1165:01	1192:01	1201:01
	1219:01	1250:01	1252:01	1286:01	1324:01	1336:01	1422:01	1427:01
	1434:01	15:01P	18:01P	28:01P	34:01P	40:01P		

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