

# False positive HLA antibody reactivity detected by single antigen bead assay

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## AIM

- Increase in false positive HLA single antigen bead (SAB) antibody results
- Characterized by pan-C, pan-DR, and donor-specific antibody (DSA) signals >2000 mean fluorescence intensity (MFI) which did not correlate with flow cytometric crossmatch (FXM) results
- Frequency evaluated over the past two years

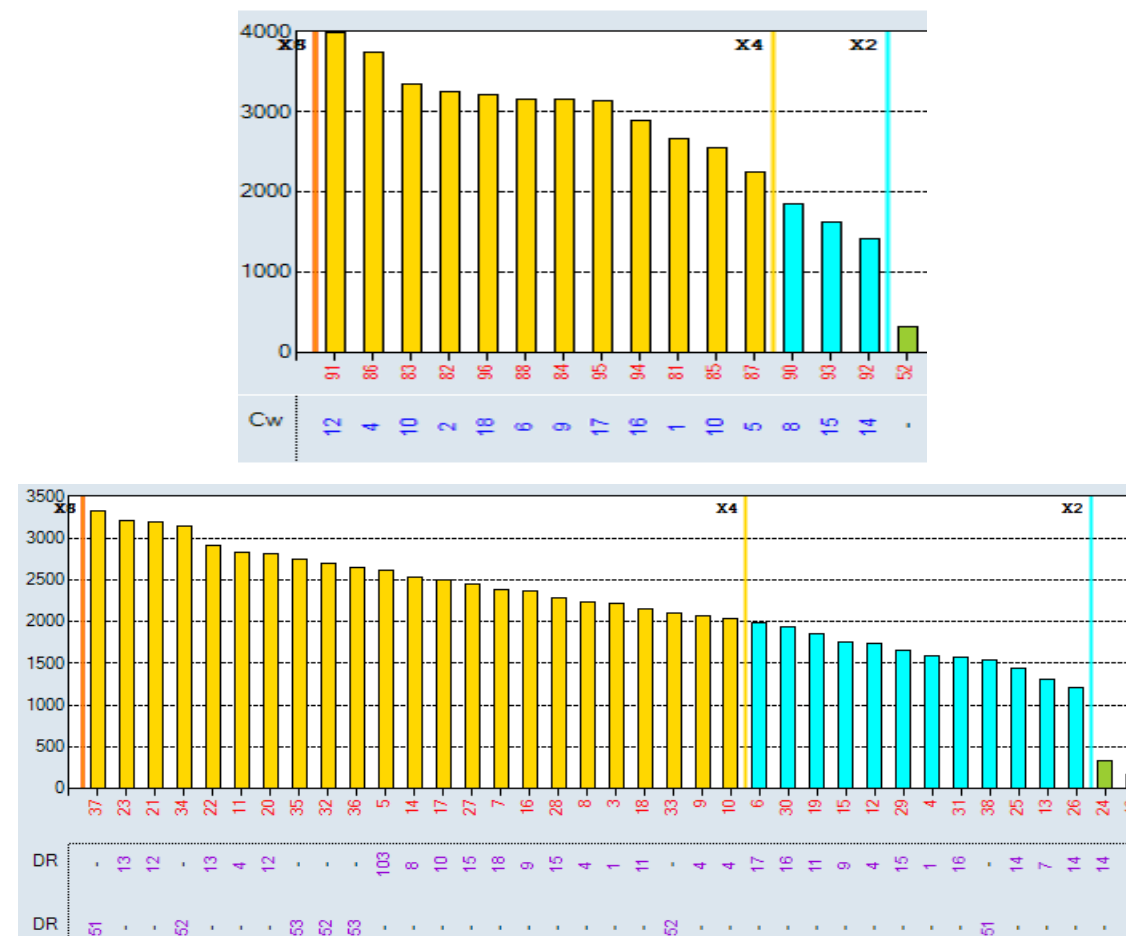
## METHODS

- Samples tested using LABScreen Single Antigen (ThermoFisher)
- Samples showing suspected false positivity retested with PreSorb serum treatment (ThermoFisher)
- Samples with persistent reactivity analyzed using alternate SAB platform (LIFECODES Single Antigen, Werfen) or antibody screening assay (LABScreen Mixed, ThermoFisher)
- Surrogate FXM performed in selected cases

TABLE 1: FALSE POSITIVE HLA-ANTIBODIES BY GROUP

6-Month Period	Number of Tests Performed	Number of pan-C Evaluated	Percent of pan-C	Number of pan-DR Evaluated	Percent of pan-DR	“Other” Evaluated
3/1/23-8/31/23	4709	21	0.45%	33	0.70%	21
9/1/23-2/29/24	4865	22	0.45%	50	1.03%	44
3/1/24-8/31/24	5213	26	0.50%	84	1.61%	53
9/1/24-2/28/25	5143	14	0.27%	42	0.82%	56
<b>Totals</b>	<b>19930</b>	<b>83</b>	<b>0.42%</b>	<b>209</b>	<b>1.05%</b>	<b>174</b>

FIGURE 1: EXAMPLES OF PAN-C AND PAN-DR



## RESULTS

- 19,930 SAB tests performed between March 2023 and February 2025
- 466 (2.4%) demonstrated false positive reactivity
  - 292 (1.5%) pan-C or pan-DR
  - 174 (0.9%) DSA with negative FXM
- 52 pan-DR repeated using PreSorb treatment
  - 14 (26.9%) no longer demonstrated false reactivity
- Data Summarized in Table 1 in six-month intervals

## CONCLUSIONS

- False positive reactivity adversely impacts organ allocation, preventing suitable donor-recipient matches
- Addressing findings has required:
  - Additional laboratory resources
  - Increased reagent use
  - Extended clinical time
  - Delays in reporting patient results
- Presorb has resolved cases with high MFI, does not work for majority of samples with pan-DR.
- Decline of false positives observed over past six months