

MHC class I chain related molecule A (MICA)
antibodies are highly prevalent in patients
attending Inkosi Albert Luthuli Central Hospital,
Durban, South Africa



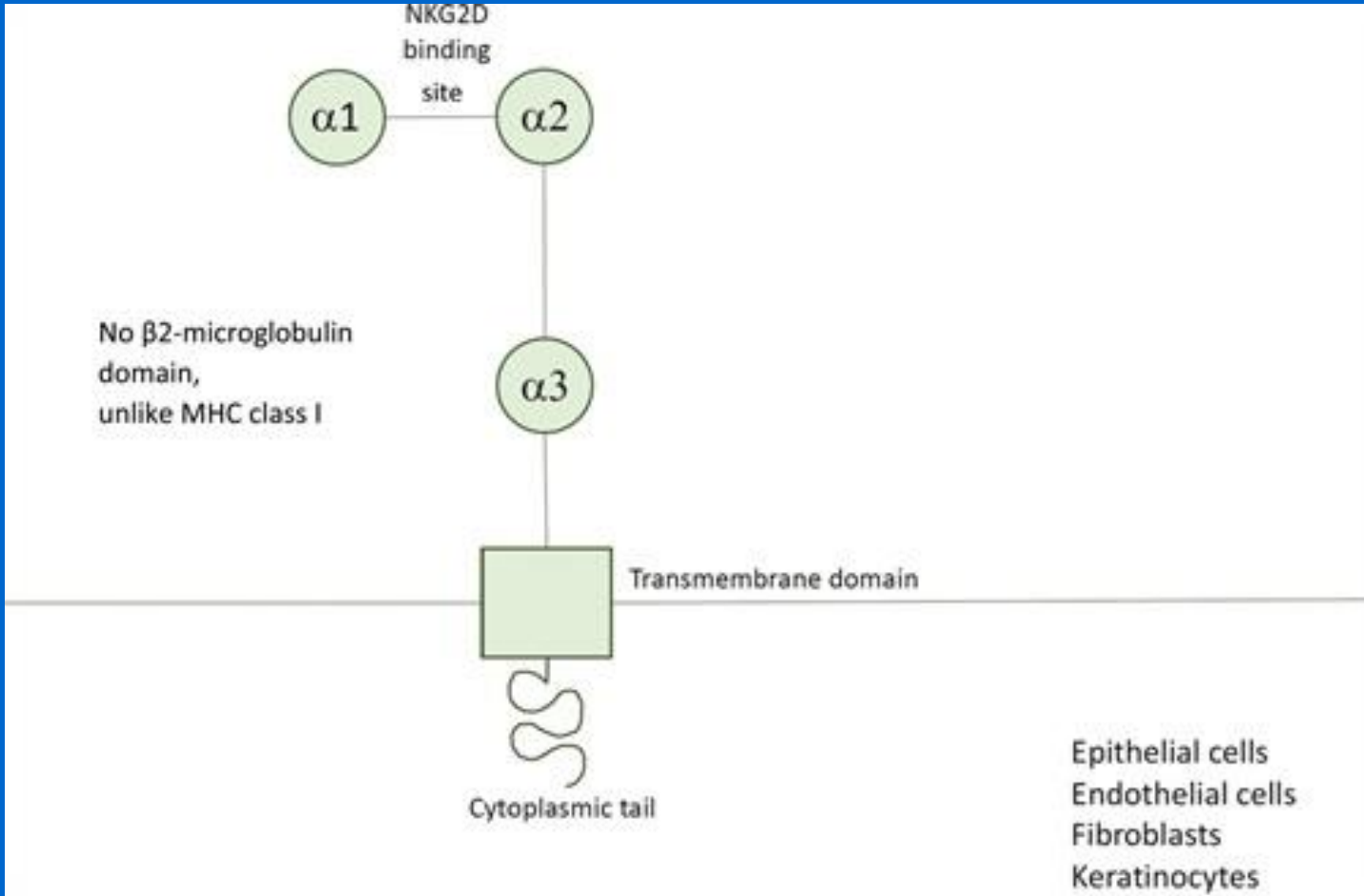
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Introduction

- Although short-term graft survival has made tremendous improvement, long-term graft survival is still lagging, and the role of non-traditional MHC molecule matching is more and more invoked.
- During the past decade, several studies reported on the association of MICA antibodies with the worst transplantation outcomes.
- *The authors have no financial interest to declare.*



Schinstock CA, Agrawal A, Valenzuela NM. The Significance of Major Histocompatibility Complex Class I Chain-related Molecule A in Solid Organ and Hematopoietic Stem Cell Transplantation: A Comprehensive Overview. *Transplantation*. 2023 May 23. doi: 10.1097/TP.0000000000004643. Epub ahead of print. PMID: 37218026.

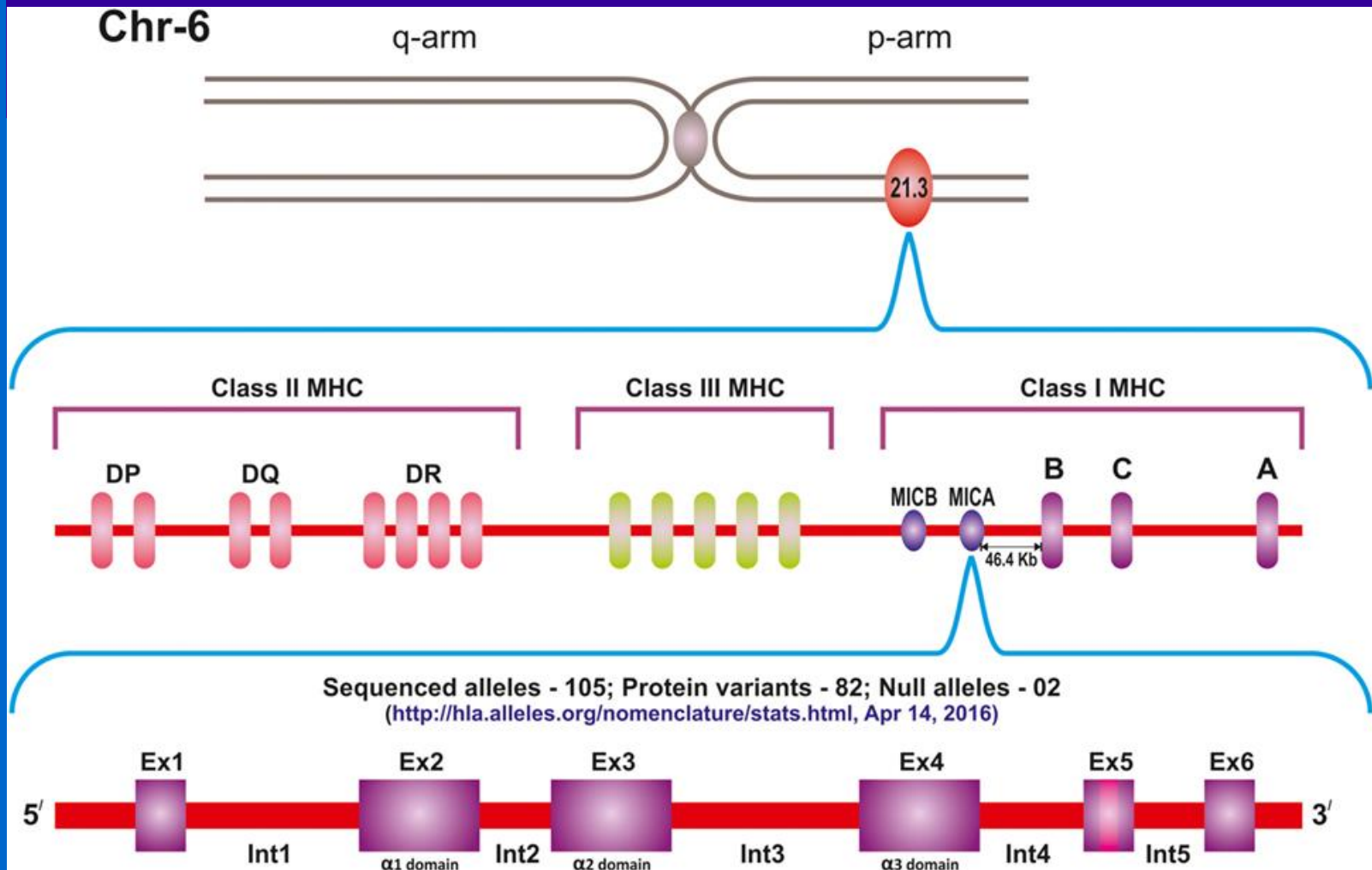


FIGURE 1. LOCATION OF THE MICA GENE ON THE SHORT ARM OF CHROMOSOME 6, CENTROMERIC TO HLA-B LOCUS. Currently 105 sequenced alleles and 82 protein variants of the gene are known
 Baranwal AK and Mehra NK (2017) Front. Immunol. 8:182. doi: 10.3389/fimmu.2017.00182

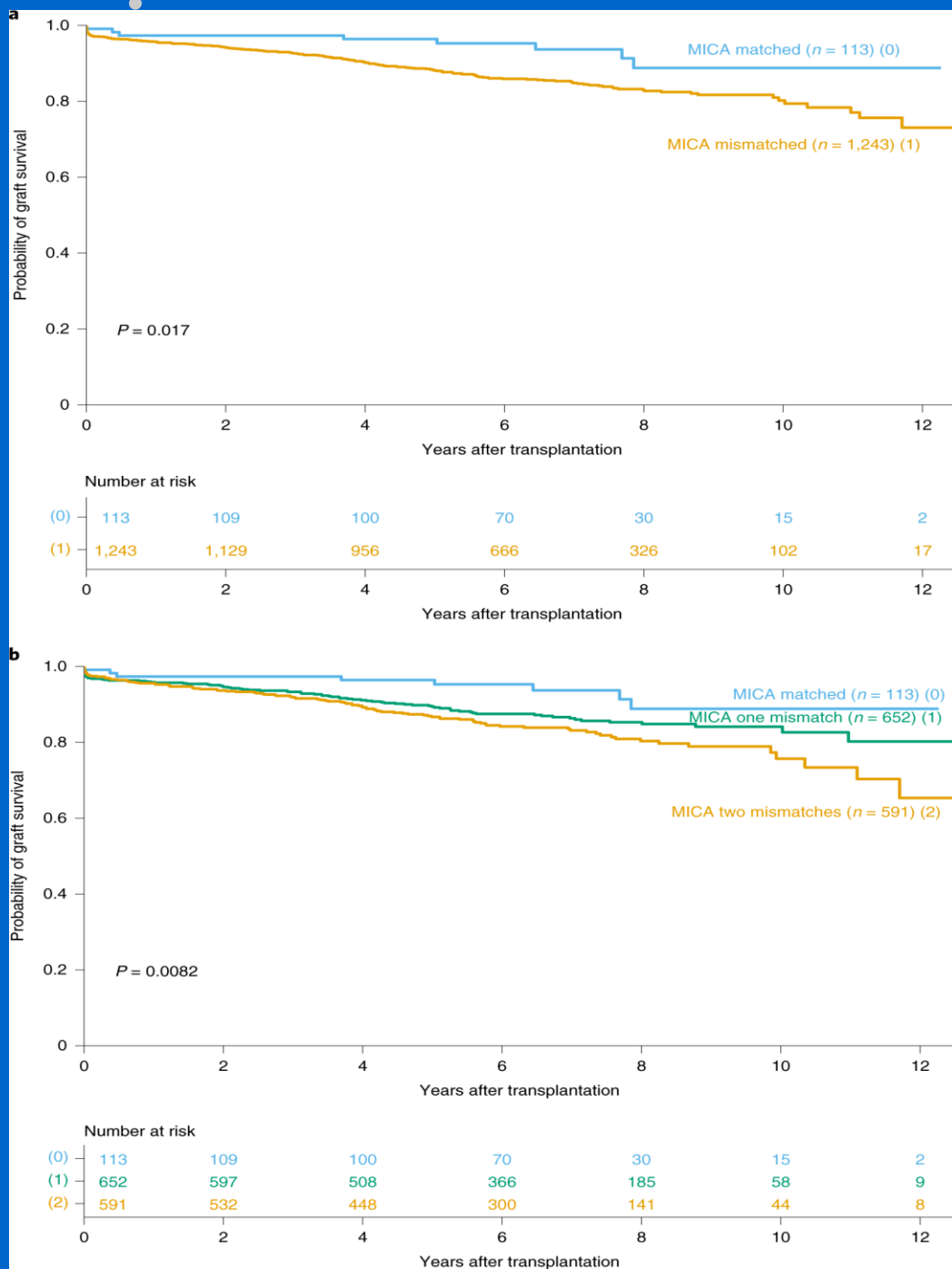


Fig. 1: Kaplan–Meier curves for kidney graft survival according to MICA matching status. The probability of graft survival is shown for matched versus mismatched patients using the presence or absence of mismatches at the MICA locus (a) or the number of mismatches (b) as classification criteria. P values were determined using the two-sided log-rank test without correction.

Raphael Carapito¹, et al. The MHC class I MICA gene is a histocompatibility antigen in kidney transplantation
 Nature Medicine, 2022, 28:989–998.
www.nature.com/naturemedicine



Methods

- We performed a retrospective review of patients' files to evaluate the demographic, clinical characteristics and results of the MICA antibody test and compare them with the results of T and B cell crossmatch from 2013 to 2021.



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- MICA antibodies were detected by Luminex screens.
 - Descriptive statistical methods and Logistical regression analysis

Results

- Out of 103 patients, 58 tested positive for MICA antibodies (56%).
- Thirty crossmatch tests were done, and 28 were negative.
- One was positive for T and B cells crossmatch, and the other was positive for B cells.
- Notably, the majority (93%) were negative for the T and B crossmatch test. Only two patients were positive for the T or B cells crossmatch.



Discussion

- While most reports indicate the prevalence of MICA antibodies between 9 and 20%, our prevalence of 56% is among the highest.
- Given the association of MICA antibodies with the worst outcome, we must add our voice to the call for a review of guidelines to consider, including MICA results and develop appropriate management.



- Plasma exchange may be considered to remove MICA antibodies before transplantation and ameliorate the outcome.
- 2020 KDIGO guidelines:
 - 19.4: We recommend HLA typing of candidates at evaluation using molecular methods, optimally at all loci (1D).
 - 19.5: We suggest not routinely testing candidates for non-HLA antibodies (2C).
- Is it the time to consider a review?

• Thank you.