



# Newsletter



## Looking forward to the EFI 2025 Annual Conference

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This Newsletter contains an in memoriam of past EFI president Frans H.J. Claas

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Please find the program of the 38<sup>th</sup> EFI Annual Conference in Prague here

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Update on the 19<sup>th</sup> IHIWS project "HLA Loss Relapse Detection after Hematopoietic Cell Transplantation"



## Dear EFI Members,

It is with deep sorrow that I am going to start this message to you sharing our sadness for the passing of Professor Frans Claas, an outstanding scientist, whose work in Histocompatibility and Transplant Immunogenetics will leave an indelible mark in the field of organ transplantation, and a great friend for all the colleagues that worldwide had the chance to meet him. He was deeply involved in the EFI activities, able to give wise advice to everyone in need, a real strong pillar for our community. Frans held the role of EFI President from 1998 to 2000, was the Chair of the Scientific Committee from 1996 to 2005 and was the Editor of the EFI newsletter for many years. He dedicated his career mostly to understanding the complex mechanisms that govern organ and tissue transplants, identifying

new aspects in the field of H&I that contributed to the improvement of clinical outcome, minimizing the complications for patients. Our thoughts are with his wife Ilse, with his family, with his friends, and with all those who had the privilege of working with him, in particular with the group of scientists in Leiden. We will dearly miss Frans, but we all know that his work and influence, a real gift to our Scientific Society, will endure over the time.

Although it is difficult in the present message to take care of other issues that may be of interest for EFI, we need to look ahead, and I am sure that Frans would be the first to encourage all of us, suggesting that we put our energy into the daily work, training and into scientific research.

*continue on page 5*

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ISSN 0962-9521

[www.efi-web.org](http://www.efi-web.org)

## From the editor's desk

With a heavy heart I write the announcement that our dear friend Frans Claas has passed away last February. His unexpected passing has had a huge impact on many of us. I have tried to pay worthy tribute to Frans in the 'in memoriam' that can be found in this Newsletter.



As Marco already mentioned in his opening of this Newsletter, Frans for sure would have wanted us to move on and continue to advance science in his collaborative spirit. How better to do this than the EFI Annual Conference in Prague? The organisers Tony Slavčev and Gottfried Fischer have put a lot of time and effort to organise what sure will be a tremendously successful EFI Conference.

This newsletter also contains an update from one of the components of the International HLA and Immunogenetics workshop, for which the final meeting is planned for May 2026 in Japan. This may serve as a reminder for project leaders of other projects that the EFI Newsletter is an ideal platform to further engage the H&I society in their projects.

As always, I hope you enjoy reading this newsletter, I hope to see you all in Prague and I am looking forward to your contribution to the next edition.

Sebastiaan Heidt

Deadline for contributions to EFI Newsletter 107 is September 5, 2025.

Please send your contributions by e-mail to [efioffice@lumc.nl](mailto:efioffice@lumc.nl)



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**from the EFI President (continued)**

With this spirit, on the behalf of his memory, I am going to inform you that Tony Slavčev and Gottfried Fischer are working hard and are delighted to welcome all participants to Prague for the 38<sup>th</sup> European Immunogenetics and Histocompatibility Conference, May 2025. The motto that characterizes the Conference, emphasizing the perspectives and new scientific developments, is "Immunogenetics: Science and Clinical Applications – The Way Ahead", anticipating with its meaning the extremely interesting Scientific Program proposed by the Local Organizing Committee in conjunction with the Scientific Committee, chaired by Luca Vago. The interesting talks that will be presented during the working days of the meeting by leading experts in the field, who have agreed to take part in the conference, will focus on the new research developments, showing the achievements that, discovering new biological mechanisms, will definitely improve the specific level of care for patients.

This is also a nice occasion to remind you that the 17<sup>th</sup> East-West Immunogenetics Conference will be held in Warsaw from March 23 to 25, 2025, organized by Jacek Nowak and Katarzyna Bogunia-Kubik, providing a great opportunity to share the latest research developments in the H&I field.

Another important scientific appointment that I would like to bring to your attention is the next 18<sup>th</sup> international Summer School (ISS) on Immunogenetics that will be

held in the city of Mérida, in Mexico, from April 6<sup>th</sup> to April 9<sup>th</sup>, 2025. Lotte Wieten, from Maastricht University Hospital and Dave Roelen, from the LUMC in Leiden will be part of the faculty as EFI representatives. ISS, sponsored by ASHI, EFI, APHIA and ARSHI will provide a course focused on the aspects of theoretical and applied H&I, limited to a small group of participants interested in research or advanced learning opportunities, will be this year hosted by our colleagues of ASHI.

Meanwhile the different EFI Committees are working to enhance the service to our community. In particular we are putting our attention to the EFI Website, that in conjunction with the skills of the Bioinformatics and IT Committee, chaired by Eric Spierings, and with the help of Sonja, Ingrid and Margriet from the EFI Office, will hopefully bring relevant improvements in the next few months. Meanwhile, I consider the changes in the website which are already available to be very useful, introducing a new way to easily reach vast amount of scientific resources available on the web site, under the "education" section, once logged in. Presentations relating to teaching sessions, lectures and talks produced during previous EFI Conferences, ISS etc. are ready to be enjoyed sitting in front of our own workstations. Moreover, I would like to inform you that in the next few weeks, both the Scientific Committee and the Education Committee will start a program of webinars, on a monthly basis, throughout the present year. I hope that this new online tutoring program will be followed and appreciated by many EFI members.

I would also like to give my special thanks and show my appreciation to the wonderful team in the EFI Office, namely Sonja Geelhoed, Ingrid Abelman and Margriet van Rijn. Also included are the EFI Officers, the Councillors on the Executive Committee and everyone who contributes to the work of our EFI Committees, especially the Chairs. These roles are very rewarding and each committee member is valued and respected. We are also delighted to announce that the EFI Young Professionals Working Party is to become a brand new Committee which will be chaired by Timo Olieslagers and Arianne Brandsma. It is hoped that with their support EFI will promote a fresh and youthful outlook, helping the society to meet the needs of our future scientists and technologists. Finally, I would like to thank again the Accreditation Committee. Under the direction of Blanka Vidan Jeras, Christien Voorter and Sabine Scherer, helped by Sonja and Ingrid, and through the great efforts produced by the Commissioners and by the Inspectors, they allow our laboratories to constantly maintain the appropriate certification, essential for continuing the correct interaction with the different worldwide International Donor Registries, Scientific Societies and other Professional Bodies.

Best regards,

Ciao.

Marco

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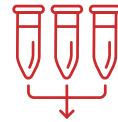
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MAR158 Rev1 VLP-PRO-10627-v1 Effective 2025-02

## Membership update

Since the last issue of the EFI Newsletter we received many applications forms from new members. Hereby we would like to welcome the following new EFI members:

A. Adiloğlu – Ataşehir, Türkiye  
M. Portell Chiesa – Palma, Spain  
A. Hofmanová – Praha, Czech Republic  
D. Nitsche – Dresden, Germany  
F. Butzeck – Erlangen, Germany  
J. Solís Estrada – Monterrey, Mexico  
A. García-Valdez – Nuevo León, Mexico  
S. Meyer – Erlangen, Germany  
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R. Stradoni – Nuoro, Italy  
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G. González Martínez – Las Palmas de Gran Canaria, Spain  
E. Rivas Garcia – Las Palmas de Gran Canaria, Spain  
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H. Ozkanay – Izmir, Türkiye  
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G. Orofino – Milan, Italy  
M. Skougaard – Aarhus, Denmark  
C. Flourou – Nicosia, Cyprus  
S. Rose – Rennes Cedex, France  
A. French – London, United Kingdom  
M. Comiotto – Bologna, Italy

## Membership fee 2025

Renew your EFI membership today! Your membership fee allows us to provide programs, professional awards and educational opportunities to support the exchange of scientific information and to reinforce the skills and knowledge of young scientists and others working in the field of immunogenetics and histocompatibility.

The annual membership fee is € 50 (for new members it is € 20 per year for the first two years). After you login to the membership part of our website, click 'pay fee' and select the year and the payment method in order to renew your EFI membership.

### EFI Membership

If you are not yet an EFI Member and you want to become one, we are of course happy to welcome you to our society. Benefits for EFI Members are receiving the EFI Newsletter, eligibility for a reduced EFI annual conference fee, possibility to apply for bursaries, have a vote, access to the membership section online, and free access to the

HLA journal. To become an EFI member please fill in the Membership application form on our website [www.efi-web.org](https://www.efi-web.org).

### EFI Booth

At the upcoming conference the Membership Secretary will be available at the EFI Booth to assist you with renewing your EFI membership, completing the EFI Membership application form and to answer all your questions regarding the EFI Membership. Please note the EFI Booth is situated in the Exhibition Hall. Sonja, Margriet and Ingrid will be available in the EFI Booth on Thursday 15 May and Friday 16 May 2025.

We are looking forward to meeting you in Prague!

Sonja Geelhoed  
Margriet van Rijn  
Ingrid Abelman





# ADAPT.

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## In memoriam Frans H.J. Claas

Frans Claas, a towering figure in histocompatibility and immunogenetics, passed away on Sunday, February 2, 2025, at the age of 73. He died unexpectedly during a vacation in South Africa where he was with his wife, Ilse, and close friends, Ronald and Diënné Bontrop.

Born on October 6, 1951, in Eindhoven, the Netherlands, Frans came from a deeply Catholic family. Early in life, he considered becoming a pope, but other career paths were also on his mind, including biology, or professional football (he almost made it to professional football club MVV Maastricht as a goalkeeper). He started secondary school in 1964 in Eindhoven and after completing his Gymnasium education in 1970, he finally chose to study biology at Leiden University. When charged with a practical research project in 1973, he did not like the available fundamental biochemical research projects. Instead, he approached Jon van Rood at the Academic Medical Center in Leiden and successfully applied as a student assistant in his laboratory. Here, he started working on the topic of transplantation tolerance in mouse models. After earning his biology degree in 1976, Frans remained in the laboratory of van Rood and began his PhD studies, which he completed in 1985 with a thesis titled 'The Interaction of Drugs and  $\gamma$ -Type Endorphins with Polymorphic Cell Membrane Antigens'. He took over supervision of the Leiden HLA laboratory, first working mainly on diagnostics before gradually increasing his scientific work. Frans made sure there was a good atmosphere in the laboratory by organizing football and table tennis competitions, 'Sinterklaas' celebrations and cabaret shows. Under his supervision the Leiden laboratory became the National Reference Center for Histocompatibility Testing. At the same time, Frans became Director of the Eurotransplant Reference Laboratory, which further strengthened his position as an authority in histocompatibility and immunogenetics. In 1996, he was appointed full Professor of Immunogenetics of Transplantation at Leiden University, with his inaugural lecture entitled 'The subtle differences between mine and thine'.

Over the years Frans has been very active in the European arena of immunogenetics and histocompatibility through the European Federation for Immunogenetics (EFI). His first official role in EFI was in 1991 when, together with Marius Giphart, Ieke Schreuder and Jon van Rood, he organized the 5<sup>th</sup> EFI annual conference, the first outside of Strasbourg. He was Chairman of the EFI Scientific Committee from 1996 to 2005, the committee responsible for the scientific program of the annual conferences and for the selection of recipients of the prestigious Julia Bodmer and Ceppellini awards. He was one of the initiators of the International Summer School. During his time as HLA laboratory director at the LUMC he also

oversaw the EFI office, which is situated close to the Leiden hospital. Furthermore, he was the Editor-in-Chief of the EFI Newsletter for 15 years (issue 35 in 2002 till issue 81 in 2017), which has been pivotal for the communication between EFI members. His most esteemed contribution to EFI was by serving as President from 1998 to 2000. Frans was an extraordinary scientist who always prioritized scientific progress and patient welfare over personal recognition. With over 600 peer-reviewed papers to his name, Frans' scientific legacy is vast. His achievements earned him several prestigious awards, including the 2006 ASHI Distinguished Scientist Award, the 2015 EFI Ceppellini Award, the 2015 ASHI Rose Payne Distinguished Scientist Award, and the 2017 van Loghem Award of the Dutch Society for Immunology. In recognition of his impact on society, he was knighted by the King of the Netherlands as a Knight of the Order of the Netherlands Lion in 2017 upon his retirement.

During his career Frans has been active in several areas of research,<sup>1</sup> from which a few highlights will be described here. One of his groundbreaking contributions which transformed kidney allocation in Eurotransplant came in 1988 when he introduced a novel approach to improve the chance of transplantation for highly sensitized patients awaiting a kidney transplant.<sup>2</sup> By extensive antibody screening using complement-dependent cytotoxicity (CDC) assays, he identified 'acceptable mismatches' that could predict a negative crossmatch. This pioneering work led to the introduction of the successful Eurotransplant Acceptable Mismatch Program,<sup>3</sup> which has enabled over 2,000 highly sensitized patients to undergo transplants to date. By working together with Rene Duquesnoy, who had just developed HLAMatchmaker,<sup>4</sup> Frans quickly realized the potential of epitope analysis for highly sensitized patients. Already in 2004 he adapted the concept of what is now called "molecular matching," for highly sensitized patients, by introducing the idea of defining additional acceptable antigens through triplet (later known as eplet) sharing.<sup>5</sup> Frans worked tirelessly to increase the impact of the acceptable mismatch approach, and showed through the European Union funded Eurostam consortium that highly sensitized patients (who often have an HLA type that is uncommon in the local donor population) could benefit from organ exchange beyond the borders of the current allocation organizations.<sup>6,7</sup> His dream was to create a European-wide Acceptable Mismatch program for the most difficult to transplant patients.





Frans during the Efi annual conference in Venice 2018 holding a bottle of Soave wine with a very familiar abbreviation.

Frans was a pioneer in the research on HLA epitopes and molecular mismatch. His team discovered early on that increased HLA triplet mismatches were linked to a higher risk of *de novo* donor-specific antibody (dnDSA) formation, while antigen mismatched but triplet-matched transplants did not trigger dnDSA.<sup>8</sup> Under his supervision, the user-friendly HLA-EMMA software was developed for amino acid mismatch analysis.<sup>9</sup> His team also explored the role of molecular mismatch in the setting of hematopoietic stem cell transplantation (HSCT). Recently, HLA-EMMA was used to define permissible mismatches in 9/10 unrelated donor pediatric stem cell transplants.<sup>10</sup> Several years earlier he showed that HLAMatchmaker analysis was not informative for T cell reactivity in HSCT, since there was no correlation with the cytotoxic T cell precursor (CTLp) frequency.<sup>11</sup> Paradoxically, more amino acid mismatches at the alpha-helices and beta-sheet resulted in a lower CTLp frequency, a finding explained by the need for some level of similarity between mismatched HLA and self-HLA for direct allo-recognition.<sup>12</sup> Closely related to these findings were his studies on heterologous immunity, where cross-reactivity of virus-specific T cells with allogeneic HLA helps to explain the relatively high frequency of T cells exhibiting direct alloreactivity.<sup>13,14</sup>

Frans’ work extends beyond transplantation, as he made significant strides in understanding immunological tolerance during pregnancy.<sup>15</sup> Actually, this was already a

subject of interest during his early work with Jon van Rood when studying non-inherited maternal HLA antigens.<sup>16</sup> Later in life he explored the T cell signature and monocyte fingerprint in the human placenta, investigating their correlation with pregnancy outcomes.<sup>17-21</sup> Also in this research line, immunogenetics was of interest, as his team showed that some degree of HLA matching, similar to the natural situation, is beneficial for a successful pregnancy after oocyte donation.<sup>22,23</sup> In his research, Frans boldly tackled controversial topics, which is exemplified by a paper that revealed a correlation between oral sex and a lower incidence of the pregnancy complication preeclampsia.<sup>24</sup> They proposed that soluble HLA in seminal fluid might play a role in inducing immunological tolerance.<sup>25</sup> Besides science, Frans was also a committed manager who always kept the bigger picture in mind. He was co-founder of the Dutch Transplant Society in 1988, and co-founder of the Dutch Transplant Foundation in 1997. He was a long-time member of the board of Dutch Transplant Foundation, the Eurodonor board, as well as the board of Eurotransplant. He served as member of the supervisory board of Matchis, and was member of the supervisory board and scientific advisory board of the Dutch Biomedical Primate Research Center. Between 2023 and 2024 Frans took on the role of interim medical director of Eurotransplant.

Beyond his scientific and managerial accomplishments, Frans will be remembered by his colleagues for his kindness and generosity. He took a personal interest in everyone he met, regardless of their background, and was deeply committed to mentoring scientists worldwide. The Leiden laboratory, under his leadership, hosted colleagues from all corners of the globe. His collaborative spirit was felt far and wide, and his exceptional social skills made him a cherished mentor and friend. The vast number of emails, text messages and phone calls from colleagues all over the world after Frans’ passing are exemplary for his global impact. Many had found a true friend in him and enjoyed his presence, also outside of the lecture hall or conference room. This is partly because Frans also had a passion for life outside the laboratory — he loved dancing, enjoyed good food, and liked to talk with friends while enjoying a good Belgian beer or Italian red wine (preferentially from Puglia). As an avid runner, he completed numerous marathons, including the Bordeaux Médoc Marathon, which combined his love of running with his appreciation for fine wine. Frans will be missed, but his spirit will live on in the generation of scientists who he has inspired to advance the field for the better of the patient. We could not have had a better mentor.

Sebastiaan Heidt

This in memoriam will also be published in the HLA journal.

References

1. Heidt S, Eikmans M, Roelen DL, van Kooten C, Claas FHJ. Immunogenetics and immunology of transplantation in Leiden. *Transpl Immunol.* 2014;31(4):195-199.

2. Claas FHJ, Gijbels Y, van der Velden-de Munck JJ, et al. A special strategy to increase the chance of finding cross-match negative kidneys for highly sensitized patients. *Transplant Proc.* 1988;20(5):947-948.

3. Heidt S, Witvliet MD, Haasnoot GW, Claas FHJ. The 25th anniversary of the Eurotransplant Acceptable Mismatch program for highly sensitized patients. *Transpl Immunol.* 2015;33(2):51-57.

4. Duquesnoy RJ. HLAMatchmaker: a molecularly based algorithm for histocompatibility determination. I. Description of the algorithm. *Hum Immunol.* 2002;63(5):339-352.

5. Duquesnoy RJ, Witvliet M, Doxiadis II, de Fijter H, Claas FHJ. HLAMatchmaker-based strategy to identify acceptable HLA class I mismatches for highly sensitized kidney transplant candidates. *Transpl Int.* 2004;17(1):22-30.

6. Mumford L, Fuggle SV, Martorell J, et al. A Europe wide acceptable mismatch program will enable transplantation of long waiting highly sensitised patients with a compatible donor. *Transpl Immunol.* 2021;64:101354.

7. Chen M, Zoet Y, Roelen D, et al. Towards uniformity in the definition of acceptable mismatches for highly sensitized patients. *HLA : immune response genetics.* 2019;94(2):147-153.

8. Dankers MK, Witvliet MD, Roelen DL, et al. The number of amino acid triplet differences between patient and donor is predictive for the antibody reactivity against mismatched human leukocyte antigens. *Transplantation.* 2004;77(8):1236-1239.

9. Kramer CSM, Koster J, Haasnoot GW, Roelen DL, Claas FHJ, Heidt S. HLA-EMMA: A user-friendly tool to analyse HLA class I and class II compatibility on the amino acid level. *HLA : immune response genetics.* 2020;96(1):43-51.

10. von Asmuth EGJ, Hiensch F, Heidt S, et al. Permissible HLA mismatches in 9/10 unrelated donor pediatric stem cell transplants using HLA-EMMA: an EBMT Inborn Errors Working Party study. *Blood advances.* 2024;8(18):4767-4777.

11. Dankers MK, Heemskerk MB, Duquesnoy RJ, et al. HLAMatchmaker algorithm is not a suitable tool to predict the alloreactive cytotoxic T-lymphocyte response in vitro. *Transplantation.* 2004;78(1):165-167.

12. Heemskerk MB, Cornelissen JJ, Roelen DL, et al. Highly diverged MHC class I mismatches are acceptable for haematopoietic stem cell transplantation. *Bone marrow transplantation.* 2007;40(3):193-200.

13. Amir AL, D’Orsogna LJ, Roelen DL, et al. Allo-HLA reactivity of virus-specific memory T cells is common. *Blood.* 2010;115(15):3146-3157.

14. van den Heuvel H, Heutink KM, van der Meer-Prins EMW, et al. Allo-HLA Cross-Reactivities of Cytomegalovirus-, Influenza-, and Varicella Zoster Virus-Specific Memory T Cells Are Shared by Different Healthy Individuals. *Am J Transplant.* 2017;17(8):2033-2044.

15. Tilburgs T, Scherjon SA, Claas FHJ. Major histocompatibility complex (MHC)-mediated immune regulation of decidual leukocytes at the fetal-maternal interface. *Journal of reproductive immunology.* 2010;85(1):58-62.

16. Claas FHJ, Gijbels Y, van der Velden-de Munck J, van Rood JJ. Induction of B cell unresponsiveness to noninherited maternal HLA antigens during fetal life. *Science.* 1988;241(4874):1815-1817.

17. Tilburgs T, Roelen DL, van der Mast BJ, et al. Evidence for a selective migration of fetus-specific CD4+CD25bright regulatory T cells from the peripheral blood to the decidua in human pregnancy. *J Immunol.* 2008;180(8):5737-5745.

18. Tilburgs T, Schonkeren D, Eikmans M, et al. Human decidual tissue contains differentiated CD8+ effector-memory T cells with unique properties. *J Immunol.* 2010;185(7):4470-4477.

19. van der Zwan A, Bi K, Norwitz ER, et al. Mixed signature of activation and dysfunction allows human decidual CD8(+) T cells to provide both tolerance and immunity. *Proc Natl Acad Sci U S A.* 2018;115(2):385-390.

20. van der Zwan A, van Unen V, Beyrend G, et al. Visualizing Dynamic Changes at the Maternal-Fetal Interface Throughout Human Pregnancy by Mass Cytometry. *Front Immunol.* 2020;11:571300.

21. Krop J, van der Zwan A, Ijsselsteijn ME, et al. Imaging mass cytometry reveals the prominent role of myeloid cells at the maternal-fetal interface. *iScience.* 2022;25(7):104648.

22. Lashley LE, Haasnoot GW, Spruyt-Gerritse M, Claas FHJ. Selective advantage of HLA matching in successful uncomplicated oocyte donation pregnancies. *Journal of reproductive immunology.* 2015;112:29-33.

23. van Bentem K, Bos M, van der Keur C, et al. The development of preeclampsia in oocyte donation pregnancies is related to the number of fetal-maternal HLA class II mismatches. *Journal of reproductive immunology.* 2020;137:103074.

24. Koelman CA, Coumans AB, Nijman HW, Doxiadis II, Dekker GA, Claas FHJ. Correlation between oral sex and a low incidence of preeclampsia: a role for soluble HLA in seminal fluid? *Journal of reproductive immunology.* 2000;46(2):155-166.

25. Nederlof I, Meuleman T, van der Hoorn MLP, Claas FHJ, Eikmans M. The seed to success: The role of seminal plasma in pregnancy. *Journal of reproductive immunology.* 2017;123:24-28.

# Update from the EFI Education Committee – February 2025

## EFI Educational Webinars

We are delighted that the first EFI Educational Webinar, addressing the topic of HLA Genes, Structure and Function will be given by Professor John Trowsdale on Wednesday 19<sup>th</sup> March 2-2.45pm (CET). An email with a link to register for the webinar was circulated to all EFI members on 25<sup>th</sup> February and the webinar will be recorded and made available on the EFI website. This will be the first in a series of 4 Educational webinars throughout the year. The aim of the program will be to cover not only the basics of HLA and the H&I services we provide, but also to introduce some more advanced subjects. The hope is across the course of the year, the programme of webinars will appeal to all EFI members regardless of experience or time in the field of H&I.

## EFI CPDMe platform goes live – February 2025

We are excited to report that the CPDMe platform is now live and ready for you to use. It’s taken a while to get this initiative ready for use, but we hope it will be a useful resource for those EFI members who do not have access to a similar system for recording their Continued Medical Education (CME) / Continued Professional Development (CPD) through their work or national organisations. You can find all information (including a User Guide and Guide to allocation of CPD points), the link to request an account, and the link to login to the CPDme platform on the Education Committee page on the EFI website via Efi-Web | Education Committee, or via the “CPDme Platform” button on the EFI website homepage. If you have any questions regarding the CPDme Platform please make contact through [education@efi-web.org](mailto:education@efi-web.org).

## Education Updates to the EFI website

There have been some helpful updates to the EFI website which have made it much easier to access the valuable education and training course materials under the “Education” section on the EFI website. There are a variety of educational materials, including the HLA journal, “Meet the Expert,” International Summer School sessions, teaching sessions, and the EFI webinar series. Please take time to explore the EFI website and the learning resources available to you. There is a wealth of e-learning resources that exist on the EFI website including:

- 10 ESHI Diploma talks (first recorded in 2020)
- 10 recorded lectures from the EFI Summer School in 2021
- 26 presentations from teaching sessions held at the EFI conferences in 2022, 2023 & 2024.

## European Technical H&I Qualification (ETHIQ) – January 2025 registrations

This training programme provides a qualification that gives a measure of both knowledge and technical competence



in H&I. The scheme is for technical staff working in EFI accredited laboratories, with supervision given by senior staff in their own lab. Information about the training programme, registration process and deadlines can be accessed on the EFI website:

<https://efi-web.org/e-learning/ethiq-for-technical-staff>. There is an online training portfolio to complete, and the content of this portfolio is in English, although trainees can complete evidence in their own language. In addition to the training portfolio, trainees are required to submit a reflective summary of 3 learning events undertaken during their training (e.g. seminars, presentations, conferences, local meetings) and a case study or essay validation report. The final multiple-choice assessment is now available in English, French, German and Spanish, with Dutch, Portuguese and Italian available in 2025. There are 2 intakes each year and the registration deadlines are 1<sup>st</sup> January and 1<sup>st</sup> July. There were 5 new registrations in January 2025 making a total of 48 students registered on the programme from 12 different countries.

## European Specialisation in H&I (ESHI) Diploma

The ESHI Diploma exams, aimed at EFI Directors/ Co-Directors and those working towards this level, are offered at two time points each year; in Spring as an in person oral exam at the EFI annual conference, and in Autumn as an online oral exam. Information regarding of the expected level of training and experience, the application process and details of the next round of exams can be found at the UEMS website: Transplant Immunology – UEMS Section of Surgery ([uemssurg.org](http://uemssurg.org)). The next examinations will be face to face in May 2025 prior to the EFI conference in Prague.

## EFI/ASHI/APHIA/ARSHI International Summer School

The next International Summer School hosted by ASHI will take place 6-9<sup>th</sup> April 2025 in Fiesta Americana Merida Hotel, Merida, Mexico. We are excited to announce that the International Summer School in 2026 will be hosted by EFI and will take place in Crete. Further details will be available soon.

## EFI Education and Scientific Bursaries

Applications for Education and Training Bursaries up to a maximum of €1500 to promote training in the field of H&I by enabling visits to other laboratories, are now being received four times each year. Details of the closing dates, the process and the online application form are available on the EFI website [bursaries page](http://www.efi-web.org/bursaries.html) <http://www.efi-web.org/bursaries.html>.  
*Deborah Sage, Chair of the EFI Education Committee*

# General Assembly

## To all EFI members

On behalf of the EFI Executive Committee I invite you to attend the General Assembly, which will be held during the 38<sup>th</sup> European Immunogenetics and Histocompatibility Conference.

It represents your opportunity, as an EFI member, to actively participate in discussing the activities of the Executive Committee and other EFI committees. Your ideas and opinions are most welcome.

The General Assembly will be held on Friday 16 May 2025, 18:00hrs in the Forum Hall of the Prague Congress Centre, Prague, Czech Republic and I strongly encourage you to attend.

## Agenda:

1. Opening
2. Minutes of the General Assembly May 22, 2024 (EFI Newsletter November 2024 issue 104)
3. Report of the EFI President
4. Report of the EFI Secretary
5. Report of the EFI Treasurer
6. Report of the EFI Committees
  - a. Accreditation
  - b. Education
  - c. External Proficiency Testing
  - d. Scientific
  - e. Standards and Quality Assurance
  - f. Bioinformatics & IT Committee
7. Next EFI conference - Edinburgh, UK
8. Installation of new EFI Officers and Councillors

*Marco Andreani, EFI President*

# Update from the EFI External Proficiency Testing Committee

During the February online-meeting the EPTC welcomed new members Amy De’Ath, Valerie Dubois and Mats Alheim. The EPTC also welcomes a member from the Young EFI Working Party: Gorjan Milanovski from Macedonia.

The committee will work on the following topics:

- Sample numbers for KIR-MICA/MICB, HNA and HPA EPT testing
- EPT on cell free DNA

- Update standards for laboratories and standards for providers
- The EPT committee procedure manual

Next meeting of the EPTC will be during the EFI conference in Prague. We are happy to welcome input from the EFI community. In case you have an EPT related subject to add to our agenda, please mail the EFI office: [EFloffice@lumc.nl](mailto:EFloffice@lumc.nl).

*On behalf of the EFI EPT Committee,  
Yvonne Zoet, interim chairperson of the EPTC*

# Update from the EFI Young Professionals Committee

We are pleased to inform you that we have finalized the program for the EFI Young Professionals session during the EFI Conference in Prague.

Are you interested in learning how to effectively communicate your scientific work to the general public or healthcare professionals? Our two expert speakers, Karolína Pštroš and Pat Smith, will explain why science communication is essential, how you can improve your skills, and provide real-life examples. This interactive

session will also offer ample time for questions and hands-on practice. Join us for the EFI Young Professionals session, How to tell and sell your story, on Friday, May 16th, at 10:30, and don’t miss this opportunity to enhance your communication skills and connect with fellow professionals!

We look forward to seeing you there!

*On behalf of the EFI Young Professionals*



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## 38<sup>th</sup> European Immunogenetics & Histocompatibility Conference

*Immunogenetics → Science and Clinical Applications → The Way Ahead*

14-17 May 2025, Prague, Czech Republic, Prague Congress Centre



## PRELIMINARY PROGRAM

## ASSOCIATED MEETINGS

### TUESDAY, MAY 13, 2025

09:00-17:00

EFI Inspectors Workshop  
ESHI Diploma examination

Panorama Hall

### WEDNESDAY, MAY 14, 2025

09:00-16:30

Executive committee meeting  
EPT committee meeting  
IT & Bioinformatics committee meeting  
Accreditation committee meeting  
Standards committee meeting  
Education committee meeting  
Scientific committee meeting  
Open Meeting of the EFI Population Genetics Working Group  
DASH meeting





# SCIENTIFIC PROGRAM

## WEDNESDAY, MAY 14, 2025

<b>17:30–19:15</b>	<b>Opening Ceremony</b>	<b>Forum Hall</b>
<b>17:30–18:00</b>	<b>Welcome addresses</b> <i>EFI President – Marco Andreani</i>	
<b>18:00–18:15</b>	<b>HLA award</b> <i>Steve Marsh</i>	
<b>18:15–18:45</b>	<b>Julia Bodmer award</b> <i>Luca Vago</i>	
<b>18:45–19:15</b>	<b>Ceppellini Lecture</b> <i>Marco Andreani</i>	
<b>19:15–21:30</b>	<b>Welcome Drink</b>	

## THURSDAY, MAY 15, 2025

<b>08:30–10:00</b>	<b>Plenary Session I: Organ Transplantation</b> <i>Chairs: Caner Süsal, Stefan Schaub</i>	<b>Forum Hall</b>
<b>08:30–09:00</b>	<b>Regulatory T cell therapy in transplantation</b> <i>Matthew Brook</i>	
<b>09:00–09:30</b>	<b>Complex situations in antibody diagnostics</b> <i>Robert Liwski</i>	
<b>09:30–10:00</b>	<b>Antibody-Mediated Rejection of Solid-Organ Allografts</b> <i>Carmen Lefaucheur</i>	
<b>10:00–10:30</b>	<b>Coffee Break</b>	
<b>10:30–12:00</b>	<b>Parallel Sessions</b> <b>Joint Session with the Czech Society for Organ Transplantation</b> <i>Chairs: Ondrej Viklicky, Georg Böhmig</i>	<b>Forum Hall</b>
<b>10:30–11:00</b>	<b>HLA incompatible transplantation: current possibilities</b> <i>Ondrej Viklicky</i>	
<b>11:00–11:30</b>	<b>The development of anti-CD38 therapy in organ transplantation</b> <i>Georg Böhmig</i>	
<b>11:30–12:00</b>	<b>Cell free DNA in the diagnostics of lung transplant rejection</b> <i>Jan Havlín</i>	
<b>10:30–12:00</b>	<b>Teaching session 1: Bioinformatics and its use in the laboratory</b> <i>Chairs: Eric Spierings, James Robinson, Nico Vince, Marco Punta</i>	<b>South Hall 2B</b>
<b>10:30–12:00</b>	<b>Abstract session 1</b>	<b>North Hall</b>
<b>10:30–12:00</b>	<b>Abstract session 2</b>	<b>Panorama Hall</b>
<b>12:00–14:00</b>	<b>Lunch Break</b>	
<b>12:00–13:00</b>	<b>Industry symposium GenDx</b>	<b>Panorama Hall</b>
<b>13:00–14:00</b>	<b>Industry symposium Werfen</b>	<b>Panorama Hall</b>



<b>14:00–15:30</b>	<b>Plenary Session II: HSCT</b> <i>Chairs: Jean Villard, Milena Vraná</i>	<b>Forum Hall</b>
<b>14:00–14:30</b>	<b>Haematopoietic stem cell transplantation in children with primary immunodeficiency – a thirty years experience in the Czech Republic</b> <i>Renata Formánková</i>	
<b>14:30–15:00</b>	<b>Immunopeptidomes – ready for the lab?</b> <i>Pietro Crivello</i>	
<b>15:00–15:30</b>	<b>New frontiers in cellular therapies for autoimmune disease</b> <i>Raffaella Greco</i>	
<b>15:30–16:00</b>	<b>Coffee Break</b>	
<b>16:00–17:30</b>	<b>Teaching session 2: Choose the donor!</b> <i>Chairs: Deborah Sage, Eduard Palou, Sandra Tafulo</i> <b>Kidney</b> <b>HSCT</b> <b>Heart/Lung</b>	<b>Panorama Hall</b>
<b>16:00–17:30</b>	<b>Special session: Tolerance</b> <i>Chairs: Pierre-Antoine Gourraud, Sylvie Ferrari-Lacraz</i> <i>Korneel Grauwet</i> <i>Dimitrios Mougialakos</i> <i>Silvia Gregori</i>	<b>Forum Hall</b>
<b>16:00–17:30</b>	<b>Abstract sessions 3</b>	<b>South Hall 2B</b>
<b>16:00–17:00</b>	<b>Industry symposium – Werfen</b>	<b>North Hall</b>
<b>17:30–18:30</b>	<b>Poster viewing session</b>	<b>Poster Area</b>

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FRIDAY, MAY 16, 2025

08:30–10:00	<b>Plenary Session III: New Developments – The cutting edge of transplantation</b> <i>Chairs: Rainer Blasczyk, Brenadan Keating</i>	Forum Hall
08:30–09:00	<b>Translational research in allogeneic HSCT</b> <i>Gerard Socie</i>	
09:00–09:30	<b>Modified Stem cells for Transplantation</b> <i>Lukas T Jeker</i>	
09:30–10:00	<b>Outcomes of Xenotransplantation</b> <i>Brendan J Keating</i>	
10:00–10:30	<b>Coffee Break</b>	
10:30–12:00	<b>Parallel Sessions</b> <b>Teaching session 3: National and international allocation systems</b> <i>Chairs: Dave Roelen, Dave Turner, E. Longhi</i>	Forum Hall
10:30–10:50	<b>Italy</b> <i>Elena Longhi</i>	
10:50–11:10	<b>UK</b> <i>Dave Turner</i>	
11:10–11:30	<b>Czech Republic</b> <i>Antonij Slavcev &amp; Dana Vasickova</i>	
11:30–12:00	<b>Eurotransplant</b> <i>Gonca Karahan</i>	
10:30–12:00	<b>Teaching session 4: Chimerism</b> <i>Chairs: Valerie Dubois, Esteban Arrieta-Bolanos</i>	Panorama Hall
10:30–11:00	<b>NGS, digital PCR, qPCR</b> <i>Valerie Dubois</i>	
11:00–11:30	<b>Technologies for HLA-Loss</b> <i>Esteban Arrieta-Bolanos, Luca Vago</i>	
11:30–12:00	<b>TBA</b> <i>Lucie Stefflova</i>	
10:30–11:00	<b>The 19<sup>th</sup> International HLA and Immunogenetics Workshop 2026</b>	Club C
10:30–11:30	<b>Industry symposium – CareDx</b>	North Hall
10:30–12:00	<b>Young EFI Professionals Session: How to tell and sell your story</b> <i>Chairs: Michaela Agapiou, Jonathan Lucas</i> <b>TBA</b> <i>Karolina Pstross</i> <b>TBA</b> <i>Pat Smith</i>	South Hall 2B
12:00–14:00	<b>Lunch Break</b>	
12:00–13:00	<b>Industry symposium – Thermo Fischer Scientific</b>	North Hall
13:00–14:00	<b>Industry symposium – CareDx</b>	Panorama Hall

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14:00–15:30	<b>Plenary Session IV: Evolutionary genetics</b> <i>Chairs: Alicia Sanchez-Mazas, Zorana Grubic</i>	Forum Hall
14:00–14:30	<b>The ecology and evolution of Mycobacterium tuberculosis in the context of host genetic variation</b> <i>Sebastien Gagneux</i>	
14:30–15:00	<b>Genetic Adaptation</b> <i>Luisa Pereira</i>	
15:00–15:30	<b>Anthropology of the Avar communities</b> <i>Zuzana Hofmanová</i>	
15:30–16:00	<b>Coffee Break</b>	
16:00–17:30	<b>Special Session: Progress in Disease associations, various</b> <i>Chairs: Frantisek Mrázek, Elissaveta Naumova</i> <b>Harmonization of HLA tests for diagnostics of Celiac Disease</b> <i>Milena Vraná</i> <b>Development of stem cell transplantation in Bulgaria and the Bulgarian Stem cell Registry</b> <i>Elissaveta Naumova</i> <b>Organ transplantation, immunogenetics and immune monitoring in India</b> <i>Uma Kanga</i> <b>Update on mechanisms of HLA association with diseases – trimolecular complex and beyond</b> <i>Frantisek Mrazek</i>	Forum Hall
16:00–17:30	<b>Abstract sessions 4</b>	Panorama Hall
16:00–17:30	<b>Abstract sessions 5</b>	South Hall 2B
16:00–17:30	<b>Abstract sessions 6</b>	North Hall
17:30–18:00	<b>EFI medals ceremony</b> <i>Chair: Marco Andreani</i>	Forum Hall
18:00–19:00	<b>EFI General Assembly</b>	Forum Hall
20:30–23:00	<b>Networking Event</b>	



## SATURDAY, MAY 17, 2025

<b>09:00–10:30</b>	<b>Best abstracts session</b> <i>Chairs: Marco Andreani, Luca Vago</i>	<b>Panorama Hall</b>
<b>10:30–11:00</b>	<b>Coffee Break</b>	
<b>11:00–12:30</b>	<b>Plenary Session V: The helping hand of Artificial Intelligence</b> <i>Chairs: Eric Spierings, Ilias Doxiadis</i> <b>Clonal Modeling</b> <i>Andrea Sottoriva</i> <b>Interfacing HLA immunogenetics with clinical tumor-rejecting immunity via artificial intelligence</b> <i>Abhishek D Garg</i> <b>Recombination dynamics in T and B cells and artificial thymic organoids</b> <i>Chenqu Suo</i>	<b>Panorama Hall</b>
<b>12:30–13:30</b>	<b>Closing Ceremony</b> <b>Jon Van Rood award &amp; best abstracts award</b> <b>Closing Lecture</b> <b>19<sup>th</sup> IHIW presentation</b> <b>Welcome to Edinburgh and final remarks</b>	<b>Panorama Hall</b>

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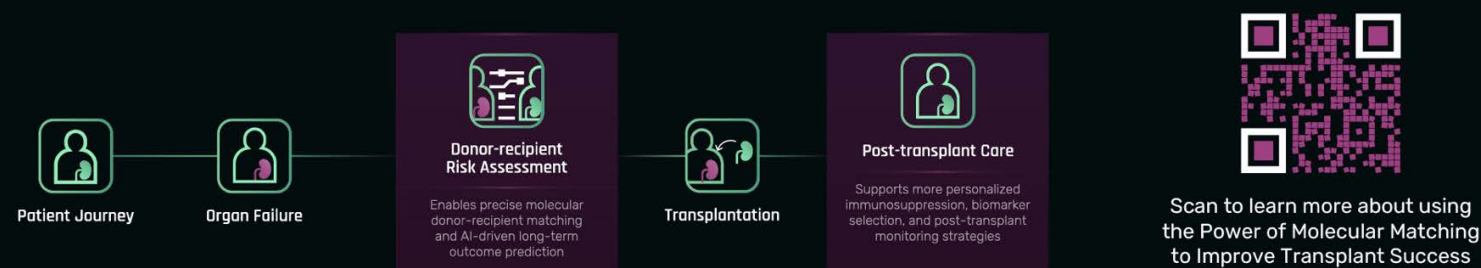
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## Update on the 19<sup>th</sup> IHIWS project “HLA Loss Relapse Detection after Hematopoietic Cell Transplantation”

Within the 19<sup>th</sup> International Histocompatibility Workshop component “Antigenicity & Immunogenicity”, our **project aimed at developing standardized protocols for the diagnosis of HLA-loss relapses after hematopoietic cell transplantation** is moving forward. Between June and August 2024, we ran a survey on the status of diagnostic procedures for HLA-loss relapses among H&I labs around the world (**Figure 1**). We received responses from 76 labs from 24 different countries from Europe, North and South America, Asia-Pacific, and the Middle East. 51% of these labs indicated that they currently perform HLA loss testing, and 66 labs stated their interest in participating in this project (**Figure 2**). Thirty-three labs also indicated their willingness to share their protocol with other participants. We are very pleased with the interest that this project has generated in our community and thank all colleagues who participate in the survey. This would not have been possible without the help of our friends at EFI, ASHI, and APHIA, to whom we are most grateful. As of February 14, **50 labs** interested in participating in this project are **currently enrolled through the IHIWS website**. In order to participate in the next phases of the project, all interested labs, regardless of whether they currently perform HLA loss testing or not, are welcome to register using the link at Registration - IHIWS 2026 (ihw19.org) under Registration to Components & Projects.

We are now planning a **business meeting at the upcoming EFI Conference in Prague** to discuss the progress and plans of the project. Please watch out for the information on the precise time and location. We look forward to the discussion with many interested participants!

After the EFI Conference, we will proceed with the next steps of the project. These will be divided in **two phases**, the first of which will involve the distribution of blinded samples with mixtures of HLA-typed DNA at varying dilutions to labs already performing HLA loss testing, in order to evaluate the performance of various methodologies currently being used. In the second phase, based on the results of this evaluation, the most successful protocols will be made available to labs not yet performing HLA loss testing. Labs

interested in implementing this technique will establish the selected methodologies in collaboration with labs involved in phase one. Protocol and data summary will be prepared in the first months of next year, to be reported and discussed at the **IHIWS Conference in May 2026**. We look forward to working with all of you on these endeavors. Please do not hesitate to contact us if you have any questions or suggestions at any stage.

*Katharina Fleischhauer, Luca Vago and Esteban Arrieta Bolaños*


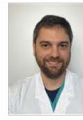

### Antigenicity & Immunogenicity



### HLA Loss Relapse after Hematopoietic Cell Transplantation

**Project leaders:**

- **Esteban Arrieta Bolaños**, Senior Postdoctoral Researcher, Institute for Experimental Cellular Therapy, University Hospital Essen, Germany (Esteban.arrieta-bolanos@uk-essen.de)
- **Katharina Fleischhauer**, Director, Institute for Experimental Cellular Therapy, University Hospital Essen, Germany (katharina.fleischhauer@uk-essen.de)
- **Luca Vago**, Group Leader, Unit of Immunogenetics, Leukemia Genomics and Immunobiology and Department of Hematology and Bone Marrow Transplantation, San Raffaele Scientific Institute, Milan, Italy (vago.luca@hsr.it)

K. Fleischhauer L. Vago E. Arrieta Bolaños @lztfe

**Milestones in years**

- ✓ **2024:** Survey about HLA loss diagnostics to Tissue Typing laboratories registered within EFI/ASHI/APHIA, enrollment of interested laboratories
- 2025:** Exchange of protocols for HLA loss diagnostics. Exchange of reference panels of artificial DNA mixes and analysis by the participating laboratories.
- 2026:** Data collection and establishment of validated protocols for HLA loss diagnostics.



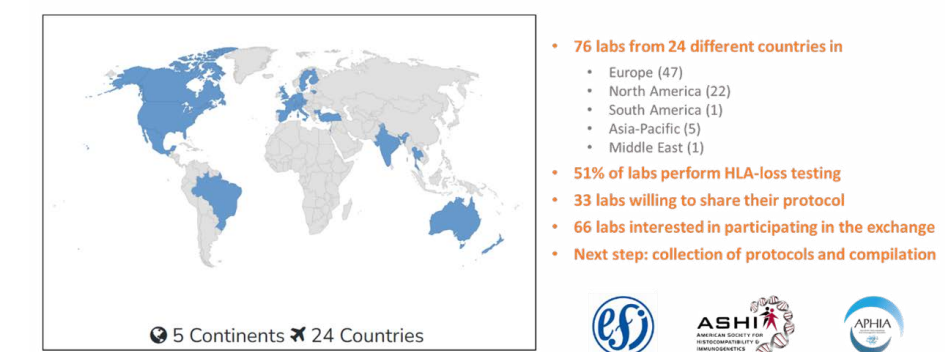



Figure 1. Project leaders and objectives of the HLA loss relapse after Hematopoietic Cell Transplantation project.

### Milestone 1: Survey of H&I Labs – HLA loss detection



\*Survey carried out with the kind support of EFI, ASHI, and APHIA Interested labs, please register at [Registration - IHIWS 2026 \(ihw19.org\)](https://ihw19.org)

Figure 2. Outcome of the global survey on HLA loss diagnostic activities amongst H&I labs.



# Update of the online tool for Peptide Binding Motif (PBM) matching of HLA class I alleles

We are pleased to announce that an updated version of the online webtool for Peptide Binding Motif (PBM) matching of HLA class I, developed in collaboration with the CIBMTR<sup>1</sup>, is now available at <https://pbm-matching-tool.b12x.org/>.

PBM was developed based on public peptide repertoire (immunopeptidome) data for HLA class I alleles, as a proxy for immunopeptidome divergence between HLA mismatches in transplantation, an important driver of T-cell alloreactivity. Single HLA class I mismatches across different PBM groups informed mortality after unrelated donor hematopoietic cell transplantation (under conventional, non-PTCy GvHD prophylaxis) in two independent studies from the CIBMTR<sup>1</sup> and the EBMT<sup>2</sup>, respectively. The online PBM calculator allows for rapid information on the PBM matching status of patient and candidate donors, based on high resolution HLA typing data. Since its launch in 2023, it has been accessed by 1,088 users from 48 countries around the globe (Figure).

Version 1 included 122 HLA class I alleles in 21 PBM groups, covering 95/203 (47%) common alleles in worldwide populations (61% in Europeans), according to the CWD catalogue, informative in 68.1% of mismatched unrelated

donor pairs in the CIBMTR registry<sup>1</sup>. Based on additional immunopeptidomics data for HLA class I that became available in the meantime, the following updates were made in version 2: *i)* 28 additional alleles received PBM assignments, for a total of 150 alleles, *ii)* 2 additional PBM groups were identified, for a total of 23 PBM groups, *iii)* 18 alleles were moved from one PBM group to another, *iv)* 2,338 alleles with identical peptide-binding domains (P-groups) were assigned to the relevant PBM groups.

Version 2 thus includes a total of 2,488 HLA class I alleles, covering 121/203 (60%) common alleles in worldwide populations (75% in Europeans), according to the CWD catalogue. It was validated in the EBMT study<sup>2</sup>, where it was informative in 85% of mismatched unrelated donor pairs. PBM groups for HLA class II are currently under development. Stay tuned!

*Pietro Crivello, Katharina Fleischhauer  
(University Hospital Essen, Germany)  
Stephanie Fingerson, Yung-Tsi Bolon  
(CIBMTR, Minneapolis, USA)*



Figure legend: Global overview of HLA class I PBM matching tool users. The map depicts the number of users per country in different shades of blue. The seven countries with the highest user counts are listed in the table beside.

1 Crivello P, Arrieta-Bolaños E, He M, Wang T, Fingerson S, Gadalla SM, Paczesny S, Marsh SGE, Lee SJ, Spellman SR, Bolon YT, Fleischhauer K. Impact of the HLA Immunopeptidome on Survival of Leukemia Patients After Unrelated Donor Transplantation. J Clin Oncol 2023 May 1;41(13):2416-2427. doi: 10.1200/JCO.22.01229. PMID: 36669145.

2 Arrieta-Bolaños E, Bonneville EF, Crivello P, Robin M, Gedde-Dahl T, Salmenniemi U, Kröger N, Yakoub-Agha I, Crawley C, Choi G, Broers AEC, Forcade E, Carre M, Poiré X, Huynh A, Reményi P, Lenhoff S, Ciceri F, Tholouli E, Schroeder T, Deconinck E, Carlson K, de Wreede LC, Hoogenboom JD, Malard F, Ruggeri A, Fleischhauer K. HLA Mismatching and Survival in Contemporary Hematopoietic Cell Transplantation for Hematological Malignancies. J Clin Oncol 2024 Oct;42(28):3287-3299. doi: 10.1200/JCO.24.00582. PMID: 39167735.

# Office talk

Today it is throwback Thursday and I would like to take you back to the history of the EFI Newsletter.

The EFI Newsletter #104 was the first digital only version of the EFI Newsletter. Before this milestone the EFI Newsletter was printed by “Mediacenter” in Rotterdam, the Netherlands. Years ago we had the privilege to visit “Mediacenter” to see how the EFI Newsletter was printed.

During an extensive tour we saw from the start till the end how the EFI Newsletter came alive so the issue could be sent to you. It was a very impressive process. As you can see on the pictures you can see that it was built up colour by colour. I wasn’t aware that the process works like that.



Enjoy the reading of this issue of the EFI Newsletter.





# Highlights from the HLA journal

By Luca Vago – section editor HLA journal

## Exploring the Relationship Between Humoral and Cellular T Cell Responses Against SARS-CoV-2 in Exposed Individuals From Emilia Romagna Region and COVID-19 Severity

Lucia Mazzotti, Patricia Borges de Souza, Irene Azzali, Davide Angeli, Oriana Nanni, Vittorio Sambri, Simona Semprini, Sara Bravaccini, Claudio Cerchione, Anna Gaimari, Fabio Nicolini, Valentina Ancarani, Giovanni Martinelli, Anna Pasetto, Hugo Calderon, Manel Juan, Massimiliano Mazza

In this interesting study, the authors analyzed the interplay between anti-SARS-CoV2 specific antibody levels, TCR repertoire, and inferred HLA genotype in 524 SARS-CoV-2-infected individuals from Emilia Romagna. Findings reinforce that age (>58 years), male sex, and hospitalization significantly correlate with higher antibody titers and severe symptoms. TCR analysis showed that while the breadth of the repertoire was similar across groups, seronegative convalescents had higher counts of specific T cell clones (clonal depth) than acute-phase patients. This suggests a compensatory immune mechanism in seronegative individuals without effective seroconversion. Notably, HLA-C\*07:02 carriers were identified as having a significantly increased risk of hospitalization (OR = 3.9,  $p = 0.03$ ), and several HLAs were linked to variations in TCR repertoire parameters. These findings provide new insights into how genetic factors shape immune responses in first-time SARS-CoV-2 exposure, potentially guiding personalized therapeutic strategies.

## Influence of HLA-G 3' Untranslated Region Haplotypes and SNP +3422 Gene Variants as Host Genetic Factors on the Outcomes of SARS-CoV-2 Infection During Acute and Post-Acute Phases in a German Cohort

Hana Rohn, Fynn Elischer, Louisa Larbig, Sarah Jansen, Sabine Schramm, Mona Otte, Margarethe Konik, Krystallenia Paniskaki, Peter Weber, Johanna Reinold, Anja Gäckler, Adalbert Krawczyk, Benjamin Wilde, Mirko Trilling, Rafael T. Michita, Birte Möhlendick, Winfried Siffert, Thorsten Brenner, Hannah Dinse, Eva M. Skoda, Peter A. Horn, Oliver Witzke, Vera Rebmann

On the same topic of the previous work, Rohn and colleagues explored potential genetic factors linked to outcomes of SARS-CoV-2 infections. In particular, this work investigated the role of HLA-G in regulating response to SARS-CoV-2. Polymorphisms in HLA-G 3'UTR were analyzed through sequencing in an unvaccinated COVID-19 cohort, including 505 patients during acute infection and 253 in the post-acute phase. The UTR-3 haplotype and the +3422T variant were found to increase the risk of fatal COVID-19, while the +3422T variant was also associated with a faster loss of neutralizing antibodies. Additionally, the UTR-7 haplotype was linked to a higher risk of Long-COVID. Together with findings on T-cell responses and HLA types, this study reinforces the influence of genetic factors in shaping individual COVID-19 outcomes, from severity to long-term effects.

## Clinical Applicability of 2-Field High-Resolution and Extended HLA-Allele Typing in Deceased Donor Kidney Allocation

Zhan Lim, Anne Taverniti, Jonathan Downing, Cindy Le, Pedro Lopez, Nicholas Larkins, Doris Chan, Aron Chakera, Lloyd D'Orsogna, Anoushka Krishnan, Matthew Chau, Esther Ooi, Farzaneh Boroumand, Armando Teixeira-Pinto, Ryan Gately, Ankit Sharma, Germaine Wong, Wai H. Lim

In deceased donor kidney transplantation, high-resolution HLA typing may improve matching and rejection risk assessment. In this work, the authors compared standard low-intermediate resolution typing with two-field high-resolution typing in 179 donor-recipient pairs. Low-intermediate resolution typing misclassified pre-transplant donor-specific antibodies (DSA) in up to 53% of cases and missed 33% of HLA-DRB1 mismatches. High-resolution typing correctly identified all DSAs and allele mismatches, providing a more precise immunological risk assessment. Additionally, 4% of recipients matched at the antigen level but mismatched at the allele level developed new DSAs. These findings highlight the potential of high-resolution typing to enhance transplant success and reduce rejection risks.

Moreover, in the February issue of HLA, our readers will find the latest update to the Nomenclature for Factors of the HLA System, as usual curated by the journal Editor-in-chief Steven G.E. Marsh.



# Save the Date

## 38<sup>th</sup> European Immunogenetics & Histocompatibility Conference

### Pre-EFI Meeting

Wednesday, May 14<sup>th</sup>, 2025 1:30 - 4:30 pm

Get ready for EFI 2025! We're gearing up with a full schedule of scientific events to showcase our latest innovations. We can't wait to see you there! In the meantime, please mark your calendars for our pre-EFI meeting on Wednesday, May 14<sup>th</sup>, at the Prague Congress Centre.

 Stay tuned for the agenda and registration details coming soon!