

Reference list

CliniMACS® TCRα/β-Biotin System

Content

1 CliniMACS® TCRα/β depletion - Clinical Data	1
2 Technical performance	12
3 Reviews	13

1 CliniMACS® TCRα/β depletion - Clinical Data

KIR-favorable Antibody Response against Vaccine Antigens in Children after TCRαβ-Depleted Haploidentical Stem Cell Transplantation: Is It Similar to That in Recipients with Fully Matched Donors?

Kondolot M, Yilmaz E, Sahin NE, Ozcan A, Kaynar L, Unal E, Karakukcu M. Trans Cell Ther 2023; doi.org/10.1016/j.jtct.2022.10.019

Haploidentical Stem Cell Transplantation After TCR-αβ+ and CD19+ Cells Depletion In Children With Congenital Non-Malignant Disease

Giardino S, Bagnasco F, Falco M, Miano M, Pierri F, Risso M, Terranova P, Di Martino D, Massaccesi E, Ricci M, Chianucci B, Dell'Orso G, Sabatini F, Podestà M, Lanino E, Faraci M. Trans Cell Ther 2022; https://doi.org/10.1016/j.jtct.2022.04.002

KIR-favorable TCRαβ/CD19-depleted haploidentical HCT in treat children with ALL/AML/MDS: primary analysis of the PTCTC ONC1401 trial

Pulsipher MA, Ahn KW, Bunin NJ, Lalefar N, Anderson E, Flower A, Cairo MS, Talano JA, Chaudhury S, Kitko CL, Duke JL, Monos D, Leung W, Dvorak CC, Abdel-Azim H. Blood 2022; doi.org/10.1182/blood.2022015959.

T-replete HLA-matched grafts vs T-depleted HLA-mismatched grafts in inborn errors of immunity Lum SH, Greener S, Perez-Heras I, Drozdov, Payne PR, Watson H, Carruthers K, January R, Nademi Z, Owens S, Williams E, Waugh S, Burton-Fanning S, Leahy TR, Cant A, Flood T, Hambleton T, Gennery AR, Slatter M. Blood advances 2022; doi 10.1182/bloodadvances.2020004072.

TCRαβ/CD19 depleted HSCT from an HLA-haploidentical relative to treat children with different nonmalignant disorders

Merli P, Pagliara D, Galaverna F, Li Pira G, Andreani M, Leone G, Amodio D, Bertaina A, Bertaina V, Strocchio L, Falco M, Algeri M, Locatelli F. Blood advances 2022; doi 10.1182/bloodadvances.2021005628

Immunological recovery following HLA-mismatch CD3+ TCR αβ+/CD19+ depleted hematopoietic stem cell transplantation in children

Sperl D, Lang P, Benesch M, Bainschab A, Urban C, Wilfing R, Feuchtinger T, Döring M, Seitz C, Strenger V, Lackner H, Seidel MG, Perwein T, Handgretinger R, Sipurzynski S, Roskopf K, Schwinger W. Ped Transpl 2022; https://doi.org/10.1111/petr.14285

Unrelated donor a/b T cell- and B cell-depleted HSCT for the treatment of pediatric acute leukemia

Leahy AB, Li Y, Talano JA, Elgarten CW, Seif AE, Wang Y, Johnson B, Monos DS, Kadauke S, Olson ST, Freedman J, Wray L, Grupp SA, Bunin N. Blood

advances 2022; doi
10.1182/bloodadvances.2021005492.

TCR $\alpha\beta$ -Depleted Haploidentical Grafts Are a Safe Alternative to HLA-Matched Unrelated Donor Stem Cell Transplants for Infants with Severe Combined Immunodeficiency

Tsifilis C, Lum SH, Nademi Z, Hambleton, Flood TJ, Williams EJ, Owens S, Abinun M, Canr AJ, Slatter MA, Gennery AR. J Clin. Immunol. 2022; doi.org/10.1007/s10875-022-01239-z.

HLA-haploidentical TCR $\alpha\beta$ + /CD19+ -depleted stem cell transplantation in children and young adults with Fanconi anemia

Strocchio L, Pagliara D, Algeri M, Li Pira G, Rossi F, Bertaina V, Leone G, Pinto RM, Andreani M, Agolini E, Giradi K, Gaspari S, Grapulin L, del Bufalo F, Novelli A, Merli P, Locatelli F. Blood advances 2021; doi 10.1182/bloodadvances.2020003707.

Immune reconstitution following TCR $\alpha\beta$ /CD19-depleted hematopoietic cell transplantation for hematologic malignancy in pediatric patients

Arnold DE, MacMath D, Seif AE, Heimall JR, Wang Y, Monos D, Grupps SA, Bunin NJ. Transpl Cell Thera 2021; doi.org/10.1016/j.jtct.2020.10.006.

Co-transplantation of mesenchymal stromal cell and haploidentical hematopoietic stem cell with TCR $\alpha\beta$ depletion in children with primary immunodeficiency syndromes

Atay D, Akcay A, Akinci B, Yenigurbuz FD, Ovali E, Ozturk G. Pedia Transpl 2021; https://doi.org/10.1111/ptr.14120.

Effect of alemtuzumab-based T-cell depletion on graft compositional change in vitro and immune reconstitution early after allogeneic stem cell transplantation

Roex CJM, Wijnands C, Veld SAJ, van Egmond E, Bogers L, Zwaginga JJ, Netelenbos T, von dem Borne PA, Veelken H, Halkes CJM, Falkenburg JHF, Jedema I. Cytotherapy 2021; doi.org/10.1016/j.jcyt.2020.08.003.

Post-transplant immunosuppression after TCR $\alpha\beta$ /CD19 graft depletion does not improve HSCT outcomes in primary immunodeficiency

Laberko A, Idarmacheva A, Glushkova S, Pershin D, Shelikhova L, Maschan M, Maschan A, Balashov D. Transpl. Cell Ther 2021; doi.org/10.1016/j.jtct.2021.11.022

A β T-cell graft depletion for allogeneic HSCT in adults with hematological malignancies

De Witte MA, Janssen A, Nijssen K, Karauskaki F, Swanenberg L, van Rhenen A, Admiraal R, van der Wagen L, Minnema MC, Petersen E, Raymakers RAP, Westinga K, Straetmans T, Halkes CJM, Boelens JJ, Kuball J. Blood 2020; doi 10.1182/bloodadvances.2020002444.

Results of a multicenter phase I/II trial of TCR $\alpha\beta$ and CD19-depleted haploidentical hematopoietic stem cell transplantation for adult and pediatric patients

Bethge WA, Eyrich M, Mielke S, Meisel R, Niederwieser D, Schlege PG, Schulz A, Greil J, Bunjes D, Brecht A, Kuball J, Schumm M, Vucinic V, Wiesneth M, Bonig H, Westinga K, Bliedermann S, Holtkamp S, Karitzky S, Malchow M, Siewert C, Handgretinger R, Lang P. BMT 2021; doi.org/10.1038/s41409-021-01551-z

HLA-haplotype loss after TCR $\alpha\beta$ /CD19-depleted haploidentical HSCT

Shyr DC, Zhang BM, Saini G, Madani ND, Schultz LM, Patel S, Kristovich K, Fernandez-Vina M, Bertaina A BMT 2020; https://doi.org/10.1038/s41409-020-01081-0

Improved survival and graft function in ex vivo T-cell depleted haploidentical hematopoietic cell transplantation for primary immunodeficiency

Lum SH, Sobh A, Carruthers K, Nademi Z, Watson H, McNaughton P, Selvarajah S, Deya-Martinez A, Abinn M, Flood T, Can A, Hambleton S, Gennery AR, Slatter M BMT 2020; https://doi.org/10.1038/s41409-020-01152-2

T-cell tracking, safety, and effect of low-dose donor memory T-cell infusions after $\alpha\beta$ T cell-depleted hematopoietic stem cell transplantation

Blagov S; Zvyagin IV, Shelikhova L, Khismatullina R, Balashov D, Komech E, Fomchenkova V, Shugay M, Starichkova J, Kurnikova E, Pershin D, Fadeeva M, Glushkova S, Muzalevskii Y, Kazachenok A, Efimenko M, Osipova E, Novichkova G, Chudakov D, Maschan A, Maschan M. BMT 2020; https://doi.org/10.1038/s41409-020-01128-2

Treosulfan-based conditioning regimen in hematopoietic stem cell transplantation with TCR $\alpha\beta$ /CD19 depletion in Nijmegen Breakage Syndrome

Laberko A, Yukhacheva D, Rodina Y, Abramov D, Konovalov D, Radygina S, Shelikhova L, Pershin D, Kadnikova O, Maschan M, Maschan A, Balashov D, Shcherbina A. J Clin Immunol. 2020; doi.org/10.1007/s10875-020-00774-x

BCG-related inflammatory syndromes in severe combined immunodeficiency after TCR $\alpha\beta$ + /CD19+ depleted HSCT

Laberko A, Yukhacheva D, Rodina Y, Abramov D, Kononov D, Radygina S, Shelikhova L, Pershin D, Kadnikova O, Maschan M, Maschan A, Balashov D, Shcherbina A. J Clin Immunol. 2020; doi.org/10.1007/s10875-020-00774-x

Immune modulation properties of zolendronic acid on TCR $\gamma\delta$ T-lymphocytes after TCR $\alpha\beta$ /CD19-depleted haploidentical stem cell transplantation: An analysis on 46 pediatric patients affected by acute leukemia

Merli P, Algeri M, Galaverna F, Milano GM, Bertaina V, Biagini S, Girolami E, Palumbo G, Sinibaldi M, Becilli M, Leone G, Boccieri E, Grapulin L, Gaspari S, Airoidi I, Strocchio L, Palgliara D, Locatelli F fimmu 2020; doi.org/10.3389/fimmu.2020.00699

$\alpha\beta$ T cell-depleted haploidentical hematopoietic stem cell transplantation without anti-thymocyte globulin in children with chemorefractory acute myeloid leukemia

Shelikohova L, Ilushina M, Shekhovtsova Z, Shasheleva D, Khismatullina R, Kurnikova E, Baidildina D, Novichkova G, Romyantsev A, Maschan A, Maschan M BBMT 2019; doi.org/10.1016/j.bbmt.2019.01.023

Control of graft-versus-host disease with rabbit anti-thymocyte globulin, rituximab, and bortezomib in TCR $\alpha\beta$ /CD19 – depleted graft transplantation for leukemia in children: a single – center retrospective analysis of two GvHD – prophylaxis regimens

Shekhovtsova Z, Shelikhova L, Balashov D, Zakharova V, Maschan A, Maschan M Pediatric Transplantation 2019; 00:e13594; https://doi.org/10.1111/petr.13594

Haploidentical hematopoietic stem cell transplantation in adults using the $\alpha\beta$ TCR/CD19-based depletion of G-CSF-mobilized peripheral blood progenitor cells

Prezioso L, Manfra I, Bonomini S, Schifano C, Roti G, Giuliani N, Aversa F BMT 2019; 54:698-702

Hematopoietic stem cell transplantation in patient with type 1 mosaic variegated aneuploidy syndrome

Laberko A, Balashov D, Deripapa E, Soldatkina O, Raikina E, Maschan A, Novichkova G, Shcherbina A Orphanet J of rare diseases 2019; 14:97

Use of TCR $\alpha\beta$ + /CD19+ - depleted haploidentical stem cell transplant is a viable option in patients with primary immune deficiency without matched sibling donor

Brettig T, Smart J, Choo S, Mechinaud F, Mitchell R, Raj TS, Cole T. J Clin Immunol. 2019; 39:505-511

Haploidentical stem cell transplantation in children with hematological malignancies using $\alpha\beta$ +T-cell receptor and CD19+ cell depleted grafts: High CD56dim/CD56bright NK cell ratio early following transplantation is associated with lower relapse incidence and better outcome

Diaz MA, Zubicaray J, Molina B, Abad L, Castillo A, Sebastian E, Galvez E, Ruiz J, Vicario JL, Ramirez M, Sevilla J, Gonzalez-Vicent M Front Immunol. 2019; doi: 10.3389/fimmu.2019.02504

New graft manipulation strategies improve the outcome of mismatched stem cell transplantation in children with primary immunodeficiencies

Elfeky R, Shah RM, Unni MNM, Ottaviano G, Rao K, Chies R, Amrolia P, Worth A, Flood T, Abinun M, Hambleton S, Cant AJ, Gimour K, Adams S, Ahsan G, Barge D, Gennery AR, Qasim W, Slatter M, Veys P J Allergy Clin Immunol 2019; https://doi.org/10.1016/j.jaci.2019.01.030

Haploidentical CD3 or $\alpha\beta$ T-cell depleted HSCT in advanced stage sickle cell disease

Foell J, Schulte JH, Pfisteringer B, Troeger A, Wolff D, Edinger M, Hofmann P, Aslanidis C, Lang P, Holler E, Eggert A, Corbacioglu S BMT 2019; https://doi.org/10.1038/s41409-019-0550-0

TCR $\alpha\beta$ + /CD19+ cell - depleted hematopoietic stem cell transplant transplantation for pediatric patients

Mitchell R, Cole T, Shaw PJ, Mechinaud F, O'Brien T, Fraser C Ped Transplant. 2019; 23:e13517

Haploidentical stem cell transplantation in children with benign disorders: Improved survival and cost-effective care over 15years from a single center in india

Uppuluri R, Sivasankaran M, Patel S, Ramakrishan B, Jayakumar I, Raj R Indian J Hematol Blood Transfus 2019; 35(3):426-430

Individualization of hematopoietic stem cell transplantation using alpha/beta T-cell depletion

Radestad E, Sundin M, Törlén J, Thunberg S, Önfelt B, Ljungman P, Watz E, Mattson J, Uhlin M fimmu 2019; 10:189

Haploidentical transplantation in high-risk pediatric leukemia: A retrospective comparative analysis on behalf of the Spanish working group for bone marrow transplantation in children (GETMON) and the Spanish grupo for hematopoietic transplantation (GETH)

Pérez-Martínez A, Ferreras C, Pascual A, Gonzalez-Vicent M, Alonso L, badell I, Fernández Navarro JM, Díaz MA Am J Hematol 2019; 1 – 10 https:// DOI: 10.1002/ajh.25661

Outcome of $\alpha\beta$ T cell-depleted transplantation in children with high-risk acute myeloid leukemia, grafted in remission

Maschan M, Shelikhova L, Ilushina M, Shekhovtsova Z, Khismatullin R, Kurnikova E, Zakharova V, Olshanskaya Y, Baidildina D, Litvinov D, Novichkova G, Maschan A. BMT 2019; <https://doi.org/10.1038/s41409-019-0531-3>

A β T-cell-depleted haploidentical hematopoietic cell transplantation and zoledronate/interleukin-2 therapy in children with relapsed high-risk neuroblastoma

Koh NK, Im HJ, Kim H, Kim N, Choi ES, Park CJ, Jang S, Seo JJ. BMT 2019; 54:348-352

Comparable Outcome with a faster engraftment of optimized haploidentical hematopoietic stem cell transplantation compared with transplantations from other donor types in pediatric acquired aplastic anemia

Kim H, Im HJ, Koh KN, Kang SH, Yoo JW, Choi ES, Cho YU, Jang S, Park CJ, Seo JJ. BBMT 2019; 25:965-974

Unrelated donor vs HLA-haploidentical α/β T-cell- and B-cell-depleted HSCT in children with acute leukemia

Bertaina A, Zecca M, Buldini B, Sacchi N, Algeri M, Saglio F, Perotti C, Gallina AM, Bertaina V, Locatelli F. Blood 2018; 132(24):2594-2607

Depletion of $\alpha\beta$ T cells for a haploidentical hematopoietic stem cell transplantation in children

Choi ES, Im HJ, Koh KN, Jang S, Park CJ, Seo JJ, Park HR. J Clin Apher 2018; 33 (4): 521-528

Comparison of outcomes after HLA-matched unrelated and $\alpha\beta$ T-cell-depleted haploidentical hematopoietic stem cell transplantation for children with high-risk acute leukemia

Erbey F, Akcay A, Ovali E, Öztürk G. Pediatr Transplant. 2018; 22(4):e13192

Haploidentical stem cell transplantation with TCR Alpha/Beta and CD19 Depletion in a case of unstable hemoglobin disease

Kumar K, Badiger S, Damodar S, Bhat S. Transplantation 2018; 102 (2): e45-e46

Selective T cell-depleted haploidentical hematopoietic stem cell transplantation for relapse/refractory neuroblastoma

Liu AP, Lee PPW, Kwok JS, Leung RYY, Chiang AKS, Ha SY, Cheuk DKL, Chan GCF. Pediatric Transplantation 2018; Jun19:e13240

A conditioning regimen with plerixafor is safe and improves the outcome of TCR $\alpha\beta$ and CD19+ Cell-depleted stem cell transplantation in patients with Wiskott-Aldrich Syndrome

Balashov D, Laberko A, Shcherbina A, Trakhtman P, Abramov D, Gutovskaya E, Kozlovskaya S, Shelikhova L, Novichkova G, Mschan M, Rumiantsev A, Maschan A. BBMT 2018; 24 (7): 1432-1440

Haploidentical stem cell transplantation cures autoimmune hepatitis and cerebrovascular disease in a patient with sickle cell disease

Calore E, Marzollo A, Cananzi M, Pizzi M, Rugge M, Rossin S, Manara R, Tumino M, Basso G, Colombatti R, Sainati L. BMT 2018 53:644-646

Clinical-scale manufacturing of $\gamma\delta$ T cells for protection against infection and disease recurrence following haploidentical peripheral blood stem cell transplantation and cyclophosphamide GvHD prophylaxis

Lamb LS, Pillai S, Langford S, Bowersock J, Di Stasi A, Saad A. BMT 2018 53:766-769

First results of a prospective multicenter Phase I/II clinical trial in adult patients using TCR alpha/beta and CD19 depleted haploidentical stem cell transplantation following reduced intensity conditioning

Bethge W, Mielke S, Niederwieser, Meisel R, Bunjes W, Brecht A, Kuball J, Karitzky S, Holtkamp S, Siewert C, Pflitsch S, Schumm M, Eyrych MK, Vucinic V, Wiesneth M, Wstinga K, Handgretinger R. Blood 2017 130:213; ASH 2017

TCR alpha/beta and CD19 depleted haploidentical stem cell transplantation following reduced intensity conditioning in children: results of a prospective multicenter phase I/II clinical trial

Lang PJ, Schlegel PG, Meisel R, Schulz AS, Greil J, Bader P, Karitzky S, Holtkamp S, Siewert C, Pflitsch S, Schumm M, Eyrych MK, Wiesneth M, Halvard B, Handgretinger R. Blood 2017 130:214; ASH 2017

Comparison of two cytoreductive regimens for $\alpha\beta$ -T-cell-depleted haploidentical HSCT in pediatric malignancies: Improved engraftment and outcome with TBI-based regimen

Jacoby E, Varda-Bloom N, Goldstein G, Hutt D, Churi C, Vernitsky H, Toren A, Bielora B. Pediatr Blood Cancer. 2017 Sep 06 doi:10.1002/pbc.26839

αβ-T-cell depleted donor lymphocyte infusion for leukemia relapse after allogeneic stem cell transplantation.

Kordelas L, Buttkeireit U, Lindemann M, Koldehoff M, Klisanin V, Horn PA, Fleischhauer K, Beelen DW
Bone Marrow Transplantation 2017 Sep 04
doi:10.1038/bmt.2017.185

T-cell receptor αβ+ and CD19+ cell-depleted haploidentical and mismatched hematopoietic stem cell transplantation in primary immune deficiency.

Shah RM, Elfeky R, Nademi Z, Qasim W, Amrolia P, Chiesa R, Rao K, Lucchini G, Cant AJ, Skinner R, Abd Hamid IJ, Flood T, Abinun M, Hambleton S, Gennery AR, Veys P, Slatter M.
J Allergy Clin. Immunol. 2017 Jul 10
doi:10.1016/j.jacie.2017.07.008

Outcome of children with acute leukemia given HLA-haploidentical HSCT after αβ T-cell and B-cell depletion

Locatelli F, Merli P, Pagliara D, Li Pira G, Falco M, Pende D, Rondelli R, Lucarelli B, Brescia LP, Masetti R, Milano GM, Bertaina V, Algeri M, Pinto RM, Strocchio L, Meazza R, Grapulin L, Handgretinger R, Moretta A, Bertaina A, Moretta L
Blood. 2017 Jun 06 doi:10.1182/blood-2017-04-779769

Case Report: Transplantation of Haploidentical TCR αβ-Depleted Hematopoietic Cells Allows for optimal Timing and Sustained Correction of the Metabolic Defect in Children With Infantile Osteopetrosis.

Pronk JHC, Turkiewicz D, Vult von Steyern K, Ehinger M, Dykes J, Toporski J.
J bone and Mineral Res. 2017 Jan
doi.org/10.1002/jbmr.2921

ASH Abstract: TCR-Alpha/Beta and CD19 depleted haploidentical Stem Cell Transplantation following reduced intensity Conditioning in Children: First Results of a prospective multicenter phase I/II Clinical Trial

Lang P, Schlegel PG, Meisel R, Schulz AS, Greil J, Bader P, Karitzky S, Holtkamp S, Siewert C, Schumm M, Eyrich MK, Wiesneth M, Bönig H, Handgretinger R.
Blood 2016 dec 128:389
doi.org/10.1016/j.bbmt.2016.12.635

ASH-Abstract: Decentralized Manufacture of TCR-alpha/beta and CD19 depleted haploidentical Stem Cell graft for children within a multicenter phase I/II Clinical Trial

Schumm M, Eyrich MK, Wiesneth M, Bönig H, Lang PJ, Schlegel PG, Meisel R, Schulz AS, Greil J, Bader P, Aktas M, Dresing P, Karitzky S, Holtkamp S, Handgretinger R
Blood 2016 dec 128:2172

Risk Factors for and the Clinical Impact of Cytomegalovirus and Epstein-Barr virus Infections in Pediatric Recipients of TCR - αβ- and CD19- Depleted Grafts

Laberko A, Bogoyavlenskaya A, Shelikhova L, Shekhovtsova Z, Balashov D, Voronin K, Kurnikova E, Boyakova E, Raykina E, Brilliantova V, Pirumova V, Novichikova G, Maschan A, Maschan M.
Biol Blood Marrow Transplant. 2016 dec 23
doi.org/10.1016/j.bbmt.2016.12.635

Analysis of memory-like natural killer cells in human cytomegalovirus-infected children undergoing αβ+ T and B cell-depleted hematopoietic stem cell transplantation for hematological malignancies.

Muccia L, Bertaina A, Flaco M, Pende D, Meazza R, Lopez-Botet M, Moretta L, Locatelli F, Moretta A, Chiesa M.
Haematologica. 2016 dec 11; Vol 101(3):371-381
doi.org/10.3324/haematol.2015.134155

Tracking T-cell immune reconstitution after TCR αβ/CD19-depleted hematopoietic cell transplantation in children

Zvyagin IV, Mamedov IZ, Tatarinova OV, Komech EA, kurnikova EE, Boyakova EV, Brilliantova V, Shelikhova LN, Balashov DN, Shugay M, Sycheva AL, Kasatskaya SA, Lebedev YB, Maschan AA, Maschan MA, Cgudakov DM.
Leukemia. 2016 Dec 09 doi:org/10.1038/leu.2016.321

TcRαβ- depleted haploidentical transplantation results in adult acute leukemia patient

Kaynar L, Demir K, Turak EE, Öztürk CP, Zararsiz G, Gönen ZB, Gökahmetoglu S, Sivgin S, Eser B, Köker Y, Solmaz M, Ünal A and Cetin M
Hematology. 2016 Sep 22
doi:org/10.1080/10245332.2016.1238182

Letter: Haploidentical CD3 TCRαβ and CD19-depleted second stem cell transplant for steroid-resistant acute skin graft versus host disease

Slatter M, Nademi Z, Leahy TR, Morillo-Gutierrez B, Dunn J, Barge D, Skinner R, Ryan C, Hambleton S, Abinun M, Flood T, Cant A, Gennery A.
Allergy Clin Immunol. 2016. Doi: 10.1016/j.jaci.2015.12.1335.

Selective Depletion of Aβ T Cells for HLA-Haploidentical Hematopoietic Stem Cell Transplantation. A Three-Year Follow-Up of Procedure Efficiency

LiPira G, Malaspina D, Girolami E, Biagini S, Cicchetti E, Conflitti G, Broglia M, Ceccarelli S, Lazzaro S, Pagliara D, Meschini A, Bertaina A, Montanari M, Locatelli F
BBMT. 2016 Aug 4
(2016).doi:10.1016/j.bbmt.2016.08.006

Treatment of graft failure with TNI-based reconditioning and haploidentical stem cells in paediatric patients

Teltschik HM, Heinzelman F, Gruhn B, Feuchtinger T, Schlegel P, Schumm M, Kremens B, Müller I, Ebinger M, Schwarze CP, Ottinger H, Zips D, Handgretinger R, Lang P.
Brit J Hematol. 2016 Jun 24. doi: 10.1111/bjh.14190.

TCR $\alpha\beta$ and CD19-depleted haploidentical stem cell transplant with reduced intensity conditioning for Hoyeraal-Hreidarsson syndrome with RTEL1 mutation

Bhattacharyya R, Tan AM, Chan MY, Jamuar SS, Foo R, Lye P
Bone Marrow Transplant. 2016 Jan 25. doi: 10.1038/bmt.2015.352.

TCR $\alpha\beta$ CD19 depletion in allogeneic haematopoietic stem cell transplantation performed for Hurler syndrome

Mainardi C, Tumino M, Gazzola MV, Rampazzo A, Scarpa M and Messina C
Bone Marrow Transplant. 2016 Nov 9 (2015). doi: 10.1038/bmt.2015.258.

TCR- α /beta and CD19 depletion and treosulfan-based conditioning regimen in unrelated and haploidentical transplantation in children with acute myeloid leukemia

Machan M, Shelikhova L, Ilushina M, Kurnikova E, Boyakova E, Balashov D, Persiantseva M, Skvortsova Y, Laberko A, Muzalevskii Y, Kazachenok A, Glushkova S, Bobrynina V, Kalina V, Olshanskaya Y, Baidildina D, Novichkova G, Maschan A.
Bone Marrow Transplant. 2016 Jan 25. doi: 10.1038/bmt.2015.343.

Haploidentical HCT using an $\alpha\beta$ T-cell-depleted graft with targeted $\alpha\beta^+$ cells by add-back after a reduced intensity preparative regimen containing low-dose TBI.

Im HJ, Koh JK, Lee SW, Choi ES, Kwon SW, Park C-J, Seo JJ.
Bone Marrow Transplant. 2016 May 09. doi: 10.1038/bmt.2016.114.

Single-Center Experience of Unrelated and Haploidentical Stem Cell Transplantation with TCR $\alpha\beta$ and CD19 Depletion in Children with Primary Immunodeficiency Syndromes

Balashov D, Shcherbina A, Maschan M, Trakhtman P, Skvortsova Y, Shelikhova L, Laberko A, Livshits A, Novichkova G, Maschan A.
Biol Blood Marrow Transplant. 2015 Jul 8. doi: 10.1016/j.bbmt.2015.07.008

Partial depletion of TCR α /beta+/ CD19+ cells in matched unrelated transplantation of three patients with osteopetrosis.

Porta F, Cavagnini S, Imberti L, Sottini A, Bolda F, Beghin A, Caruso A, Lanfranchi A.
Bone Marrow Transplant. 2015 Sep 14. doi: 10.1038/bmt.2015.201. [Epub ahead of print] No abstract available.

Improved immune recovery after transplantation of TCR $\alpha\beta$ /CD19-depleted allografts from haploidentical donors in pediatric patients.

Lang P, Feuchtinger T, Teltschik HM, Schwinger W, Schlegel P, Pfeiffer M, Schumm M, Lang AM, Lang B, Schwarze CP, Ebinger M, Urban C, Handgretinger R.
Bone Marrow Transplant. 2015 Jun;50 Suppl 2:S6-S10. doi: 10.1038/bmt.2015.87.

T-cell depletion: from positive selection to negative depletion in adult patients.

Aversa F.
Bone Marrow Transplant. 2015 Jun;50 Suppl 2:S11-3. doi: 10.1038/bmt.2015.88.

$\gamma\delta$ T-cell reconstitution after HLA-haploidentical hematopoietic transplantation depleted of TCR- $\alpha\beta$ /CD19+ lymphocytes.

Airoidi I, Bertaina A, Prigione I, Zorzoli A, Pagliara D, Cocco C, Meazza R, Loiacono F, Lucarelli B, Bernardo ME, Barbarito G, Pende D, Moretta A, Pistoia V, Moretta L, Locatelli F.
Blood. 2015 Apr 9;125(15):2349-58. doi: 10.1182/blood-2014-09-599423. Epub 2015 Jan 22.

TCR α /beta depletion and treosulfan/melphalan conditioning in juvenile myelomonocytic leukemia: single center experience.

Shasheleva D, Maschan M, Shelikhova L, Maschan M, Balashov D, Skvortsova J, Kurnikova E, Livshits A, Novichkova G, Maschan A.
BMT 2015 Mar;50 Suppl1: 600.

Comparison of Cellular Immune Reconstitution for two different method of Haploidentical Hematopoietic Stem Cell Transplantation in children (Post Transplantation Cyclophosphamide versus Negative Depletion of TcR $\alpha\beta$ (+)); Preliminary results.

Karakukcu M, Uygun V, Ünal E, Karasu G, Patiroğlu T, Özdemir MA, Yeşilipek MA.
BMT 2015 Mar;50 Suppl1: 472.

Alpha/Beta T- Cell Depleted Allogeneic Stem Cell Transplantation From Matched Related And Unrelated Donor Grafts In Patients With High Risk Hematological Malignancies.

De Witte MD, Fleurke G, van de Wagen L, Slaper I, Kuball J.
BMT 2015 Mar;50 Suppl1: 472.

Haploidentical Hematopoietic Stem Cell Transplantation with Depletion of TcR $\alpha\beta$ (+) in Children: Erciyes Pediatric BMT Center.

UNAL E, KARAKUKCU M, MUTLU FT, YILMAZ E, ISIK B, GUL KIRKAS O, PATIROGLU T, OZDEMIR MA. BMT 2015 Mar;50 Suppl1: 470.

The Father, the Son and Stem Cells: TCR $\alpha\beta$ and CD19 depleted Haploidentical stem cell transplant in Hoyeraal - Hreidarsson Syndrome.

Iyer P, Tan AM, Chan MY, K V, Bhattacharyya R. BMT 2015 Mar;50 Suppl1: 463.

A Single Center Experience of Haploidentical Stem Cell Transplants in Pediatric Leukemia.

Tan PL, Villegas M, Soh TG, Yeoh A, Quah TC. BMT 2015 Mar;50 Suppl1: 462.

Use of TCR $\alpha\beta$ /CD19 depletion results in superior immune recovery compared to CD34 selection after transplantation of haploidentical peripheral stem cells in children.

Lang P, Feuchtinger T, Teltschik HM, Schwinger W, Schlegel P, Pfeiffer M, Schumm M, Lang AM, Lang B, Schwarze CP, Ebinger M, Urban C, Handgretinger R. BMT 2015 Mar;50 Suppl1: 461.

Immune reconstitution after haploidentical transplantation in children with hematological malignancies: a retrospective analysis using CD3/CD19 or TCR $\alpha\beta$ /CD19 depleted mobilized peripheral stem cell grafts.

Diaz MA, Abad L, Castillo A, Perez A, Deltoro N, Gonzalez-Vicent M, Ramirez M. BMT 2015 Mar;50 Suppl1: 450.

Anti-cancer and anti-viral effect of TcR $\alpha\beta$ (+) depleted DLI: Lessons learned from three children and utility for further indications.

KARAKUKCU M, UNAL E, MUTLU FT, YILMAZ E, ISIK B, GUL KIRKAS O, PATIROGLU T, OZDEMIR MA. BMT 2015 Mar;50 Suppl1: 383.

Haploidentical T-cell depleted HSCT in children: cost analysis comparing 2 different T-cell depletion techniques.

Zecca M, Perotti C, Viarengo G, Del Fante C, Giorgiani G, Strocchio L, Rubert L, Mina T, Tolva A, Decembrino N, Acquafredda G, Montagna D, Comoli P. BMT 2015 Mar;50 Suppl1: 346.

Haploidentical Paternal TCR $\alpha\beta$ and CD 19 Depleted Stem Cell Transplant For Severe Combined Immunodeficiency With Pneumocystis Jiroveci Pneumonia.

Kharya DG, Doval D, Chaudhary DR, Dhamija M, Khandelwal V, Lunkad S, Setia R, Handoo A, Sharma S. BMT 2015 Mar;50 Suppl1: 341.

Depletion of TCR $\alpha\beta$ + T cells and CD19+ B cells using the Miltenyi CliniMACS Cell Separation System.

Hutchins CJ, Harvey K, Smith P, Platt R, Shergold J, Kennedy G, Durrant S, Hill G, Mitchell R, Fraser C. BMT 2015 Mar;50 Suppl1: 340.

Negative depletion approaches of CD3 $\alpha\beta$ t lymphocytes in haploidentical transplant in thalassemia and sickle cell disease patients.

Sodani P, Isgrò A, Marziali M, Gaziev J, Paciaroni K, Alfieri C, De Angelis G, Gallucci C, Ribersani M, Adorno G, Lanti A. BMT 2015 Mar;50 Suppl1: 332.

Haploidentical hematopoietic stem cell transplantation in pediatric patients: comparison of depletion efficacy and engraftment according to in vitro T cell depletion method.

Choi ES, Suh JK, Lee SW, Koh KN, Im HJ, Seo JJ, Jang S, Park CJ, Kwon SW. BMT 2015 Mar;50 Suppl1: 327.

Complementary activity of NK and $\gamma\delta$ T cells post TcR $\alpha\beta$ /CD19 depleted haploidentical hematopoietic stem cell transplantation.

Schlegel P, Schilling A, Kyzirakos C, Seidel U, Klose C, Handgretinger R, Lang P. BMT 2015 Mar;50 Suppl1: 316.

A pilot trial of low-dose infusions of CD45RA depleted donor lymphocytes to improve immune reconstitution after TCR alpha/beta depleted transplantation.

Maschan M, Shelikhova L, Balashov D, Skvortsova J, Blagov S, Tatarinova1 O, Kurnikova E, Boyakova1 E, Muzalevskii Y, Kazachenok A, Levadnyi A, Glushkova1 S, Novichkova G, Maschan A. BMT 2015 Mar;50 Suppl1: 314.

A pilot study of post-transplant hypomethylating agents + Bortezomib + NK/gamma-delta T cell infusions in children with hematological malignancies.

Ilushina M, Shelikhova L, Maschan M, Balashov D, Skvortsova J, Kalinina V, Shasheleva D, Novichkova G, Maschan M. BMT 2015 Mar;50 Suppl1: 312.

TCR $\alpha\beta$ + /CD19+-depletion in hematopoietic stem cells transplantation from matched unrelated and haploidentical donors following treosulfan-based conditioning in pediatric acute lymphoblastic leukemia patients.

Shelikhova L, Maschan M, Balashov D, Skvortsova J, Kalinina V, Shasheleva D, Novichkova G, Maschan A, Ilushina M. BMT 2015 Mar;50 Suppl1: 271.

Safety and efficiency of bortezomib to improve GVHD control in TCR-alpha/beta depleted transplantation in children with acute myeloid leukemia.

Shelikhova L, Maschan M, Balashov D, Skvortsova J, Boyakova E, Kalinina V, Shasheleva D, Persiantseva M, Novichkova G, Maschan A, Arbelbide J.
BMT 2015 Mar;50 Suppl1: 270.

Zoledronic acid is able to potentiate $\gamma\delta$ T-cell anti-leukemic activity in patients receiving $\alpha\beta$ + T cell and CD19+ B lymphocytes depleted grafts from haplo-identical donor.

Airoidi I, Bertaina A, Petretto A, Lucarelli B, Zorzoli A, Merli P, Lavarello C, Barbarito G, Brescia LP, Bertaina V, Inglese E, Milano GM, Locatelli F.
BMT 2015 Mar;50 Suppl1: 252.

Haploidentical hematopoietic stem cell transplantation using ex vivo T cell-depleted grafts in pediatric patients.

Im HJ, Koh KN, Suh JK, Lee SW, Choi ES, Jang S, Seo JJ.
BMT 2015 Mar;50 Suppl1: 251.

Low transplant-related mortality in children with acute leukemia given hla-haploidentical hematopoietic stem cell transplantation after removal of Alpha/Beta+ t cells and of CD19+ b cells from the graft

Locatelli F, Bertaina A, Merli P, Lucarelli B, Brescia LP, Pagliara D, Pinto R, Masetti R, Pende D, Ceccarelli S, Falco M, Moretta A, Moretta L, Li Pira G.
BMT 2015 Mar;50 Suppl1: 250.

Analysis of risk factors of viral reactivation after haploidentical and matched unrelated hematopoietic stem cell transplantations with TCR alpha/beta and CD19 depletion.

Laberko A, Maschan M, Shelikhova L, Balashov D, Skvortsova J, Boyakova E, Kalinina V, Shasheleva D, Persiantseva M, Novichkova G, Maschan A.
BMT 2015 Mar;50 Suppl1: 187.

$\alpha\beta$ /CD19 negative immunoselection for haploidentical transplants in pediatric setting.

Del Fante C, Zecca M, Viarengo G, Rubert L, Giorgiani G, Bonetti F, Perotti C.
BMT 2015 Mar;50 Suppl1: 155.

Haploidentical TCR $\alpha\beta$ and CD19 Depleted Stem Cell Transplant for Primary Immunodeficiency – 6 cases

Morillo-Gutierrez B, Nademi Z, Dunn J, Barge D, Hambleton S, Abinun M, Flood T, Cant AJ, Gennery A, Slatter M.
BMT 2015 Mar;50 Suppl1: 151.

Treatment of Secondary Graft Failure after Hematopoietic Stem Cell Transplantation with Alpha/Beta T-Cell Depleted Grafts as Booster Infusions.

Rådestad E, Wikell H, Engström M, Watz E, Sundberg B, Thunberg S, Uzunel M, Mattsson J, Uhlin M.
BMT 2015 Mar;50 Suppl1: 121.

Use of zoledronic acid after TcR $\alpha\beta$ /CD19-depleted haploidentical transplantation to enhance $\gamma\delta$ T cells anti-leukemia effect.

Merli P, Lucarelli B, Milano GM, Pende D, Airoidi I, Li Pira G, Brescia LP, Pagliara D, Bertaina V, Ceccarelli S, Moretta L, Bertaina A, Locatelli F.
BMT 2015 Mar;50 Suppl1: 96.

Graft depletion of TCR α /beta and CD19 in matched unrelated and haploidentical transplantation for severe aplastic anemia: high survival with low incidence of graft-versus-host disease and transplant-related mortality.

Maschan M, Shelikhova L, Balashov D, Skvortsova J, Blagov S, Tatarinova O, Kurnikova E, Boyakova E, Kalinina V, Gutovskaya E, Schipitsina I, Shasheleva D, Persiantseva M, Novichkova G, Maschan A.
BMT 2015 Mar;50 Suppl1: 87.

Haploidentical Stem Cell Transplantation after Depletion of T Cells Expressing the $\alpha\beta$ Chain of the T-Cell Receptor (TCR) and CD19+ B cells for Adults with Hematological Malignancies.

Prezioso L, Bonomini S, Sammarelli G, Schifano C, Rossetti E, Monti A, Todaro G, Cravioito L, Manfra I, Spolzino A, Cambò B, Sassi M, Caramatti C, Aversa F.
BMT 2015 Mar;50 Suppl1: 84.

HLA haploidentical hematopoietic stem cell transplantation after removal of $\alpha\beta$ + T lymphocytes for children with non-malignant disorders: a fulfilled promise.

Bertaina A, Lucarelli B, Pagliara D, Merli P, Palumbo G, Pende D, Milano GM, Li Pira G, Romano MT, Moretta L, Locatelli F.
BMT 2015 Mar;50 Suppl1: 39.

Related T-Cell Depleted HLA-Haploidentical Stem Cell Transplantation (TCD-Haplo) versus Umbilical Cord Blood Transplantation (UCBT) in Pediatric Patients with Acute Leukemia, a Eurocord, CBC-CTIWB, PDWP-EBMT Study.

Locatelli F, Labopin M, Michel G, Handgretinger R, O'Brien T, Klingebiel T, Ayas M, Bertaina A, Zecca M, Dalle JH, Capolsini I, Diaz de Heredia C, Cornish JM, Diaz MA, Berger M, Lanino E, Messina C, Santarone S, Kenzey C, Giannotti F, Peters C, Rocha V, Gluckman E, Bader P, Ruggeri A.
BMT 2015 Mar;50 Suppl1: 3.

Transplantation of Maternal Haploidentical TCR $\alpha\beta$ -Depleted Stem Cells for Malignant Infantile Osteopetrosis – Optimal Timing and Rapid Hematological Recovery.

Pronk CJH, Turkiewicz D, Dykes J, Toporski J. Blood (ASH Annual Meeting Abstracts). 2014 Nov;124: 5935.

Haploidentical Hematopoietic Stem Cell Transplantation in Pediatric Patients: Comparison of Early Post-Transplant Outcome According to in Vitro Depletion Method.

Im HJ, Koh KN, Suh JK, Choi ES, Jang S, Park CJ, Seo JJ. Blood (ASH Annual Meeting Abstracts). 2014 Nov;124: 1229.

Improved Immune Recovery after Transplantation of TCR $\alpha\beta$ /CD19 Depleted Allografts from Haploidentical Donors in Pediatric Patients.

Lang P, Feuchtinger T, Teltschik HM, Schwinger W, Schlegel P, Schumm M, Lang AM, Lang B, Schwarze CP, Ebinger M, Urban CE, Handgretinger R. Blood (ASH Annual Meeting Abstracts). 2014 Nov;124: 852.

Haploidentical T-cell alpha beta receptor and CD19–depleted stem cell transplant for Wiskott-Aldrich syndrome.

Kharya G, Nademi Z, Leahy TR, Dunn J, Barge D, Schulz A, Cant A, Gennery A, Slatte M. J Allergy Clin Immunol. 2014 Nov;134(5):1199-201. doi: 10.1016/j.jaci.2014.04.041. Epub 2014 Jun 27.

HLA-haploidentical stem cell transplantation after removal of $\alpha\beta$ + T and B-cells in children with non-malignant disorders.

Bertaina A, Merli P, Rutella S, Pagliara D, Bernardo ME, Masetti R, Pende D, Falco M, Handgretinger R, Moretta F, Lucarelli B, Brescia LP, Li Pira G, Testi M, Cancrini C, Kabbara N, Carsetti R, Finocchi A, Moretta A, Moretta L, Locatelli F. Blood. 2014 Jul 31;124(5):822-6. doi: 10.1182/blood-2014-03-563817. Epub 2014 May 28.

Haploidentical TCR A/B and B-cell depleted hematopoietic SCT in pediatric SAA and aspergillosis.

Tumino M, Mainardi C, Pillon M, Calore E, Gazzola MV, Destro R, Strano A, Varotto S, Gregucci F, Basso G, Messina C. BMT 2014 Jul; 49:847

Relapse after allogeneic hematopoietic cell transplantation: Haploidentical transplantation as promising salvage therapy.

Dorn C, Haen SP, Faul C, Vogel W, Kanz L, Bethge W. BMT 2014 Mar; 49 Suppl1: 552.

Alpha beta T-cell depleted HLA-haploidentical hematopoietic stem cell transplantation: Single center experience.

Pala C, Cetin M, Kaynar L, Solmaz M, Demir K, Sivgin S, Keklik M, Akyol G, Turak E, Camlica D, Eser B, Unal A. BMT 2014 Mar;49 Suppl1: 546.

Treatment of steroid-refractory skin graft versus host disease with a CD3 TCR ab/CD19-depleted haplo-identical HSCT.

Nademi Z, Gennery A, Dunn J, Slatte M. BMT 2014 Mar;49 Suppl1: 537.

Alpha/beta T-cell depleted haploidentical stem cell transplantation as a treatment of hemophagocytic syndrome.

Keklik M, Kaynar L, Akyol G, Pala C, Eser B, Sivgin S, Unal A, Cetin M. BMT 2014 Mar; 49 Suppl1: 529.

Haploidentical hematopoietic stem cell transplantation with selective depletion of $\alpha\beta$ T-cell receptor (TCR $\alpha\beta$) in children: Preliminary results of Erciyes University, Kayseri, Turkey.

Karakukcu M, Unal E, Isik B, Yilmaz E, Turkan Mutlu F, Gul Kirkas O, Patiroglu T, Akif Ozdemir M. BMT 2014 Mar;49 Suppl1: 512.

Successful treatment of Hurley's syndrome using allogeneic haematopoietic stem cell transplantation with alpha/beta TCR and CD19 depletion.

Mainardi C, Tumino M, Boaro MP, Calore E, Pillon M, Varotto S, Gazzola MV, Destro R, Strano A, Scarpa M, Basso G, Messina C. BMT 2014 Mar;49 Suppl1: 493.

Graft TCR-alpha/beta depletion and peri-transplant use of Eculizumab in matched unrelated donor transplantation for severe aplastic anemia-paroxysmal nocturnal hemoglobinuria: Report of two cases.

Maschan M, Shelikhova L, Boyakova E, Kalinina V, Balashov D, Skvortsova Y, Khismatullina R, Muzalevskii Y, Novichkova G, Maschan A. BMT 2014 Mar;49 Suppl1: 440.

TCR-alpha/beta+/CD19+-depletion in hematopoietic stem cell transplantation from matched unrelated and haploidentical donors in pediatric acute leukemia patients.

Maschan M, Shelikhova L, Tatarinova O, Balashov D, Kurnikova E, Boyakova E, Bobrykina V, Skvortsova Y, Ilushina M, Shipitsina I, Shasheleva D, Shekhovtsova Z, Novichkova G, Maschan A. BMT 2014 Mar;49 Suppl1: 381.

Current results with transplantation of TCRab/CD19 depleted stem cells from haploidentical donors in children.

Lang P, Feuchtinger T, Telschik HM, Schumm M, Schlegel P, Pfeiffer M, Ebinger M, Schwarze CP, Handgretinger R.
BMT 2014 Mar; 49 Suppl1: 377.

Immune reconstitution after haematopoietic stem cell transplantation with TCR alpha/beta and CD19 depletion in children with non malignant diseases.

Boaro MP, Tumino M, Mainardi C, Pillon M, Calore E, Gazzola MV, Strano A, Destro R, Varotto S, Putti MC, Sainati L, Basso G, Messina C.
BMT 2014 Mar; 49 Suppl1: 371.

TCR alpha/beta-depleted HSCT in patients with primary immunodeficiency diseases.

Balashov D, Maschan M, Skvortsova Y, Shelikhova L, Gutovskaya E, Shasheleva D, Shipitsina I, Ilushina M, Shekhovtsova Z, Tsetlina V, Khismatullina R, Tatarinova O, Kurnikova E, Boyakova E, Levadnyy A, Muzalevsky J, Novichkova G, Maschan A.
BMT 2014 Mar;49 Suppl1: 357.

Depletion of TCRa/b+CD19+ cell as a novel approach in SCT for osteopetrosis.

Cavagnini S, Guarisco S, Bolda F, Baffelli R, Beghin A, Lanfranchi A, Porta F.
BMT 2014 Mar; 49 Suppl1: 319.

Kinetics and quality of gamma/delta T-cell reconstitution after TCR-alpha/beta/CD19-depleted haploidentical HSCT.

Airolidi I, Prigione I, Bertaina A, Zorzoli A, Pagliara D, Barbarito G, Rutella S, Pinto RM, Pistoia V, Merli P, Brescia L, Lucarelli B, Moretta L, Locatelli F.
BMT 2014 Mar; 49 Suppl1: 241

Alpha/beta T cell depletion of HLA-identical sibling stem cell transplantation: Two-center experience.

Kaynar L, Uzay A, Akyol G, Pala C, Ratip S, Şivgin S, Eser B, Unal A, Ovalı E, Cetin M.
BMT 2014 Mar; 49 Suppl1: 201.

Feasibility of alpha beta T-cell depleted allogeneic stem cell transplantations from matched related and unrelated donor grafts and engraftment in patients with poor risk leukemia.

Van Der Wagen L, te Boome L, Westinga K, Slaper-Cortenbach I, Kuball J.
BMT 2014 Mar;49 Suppl1: 152.

Transplantation from matched unrelated donors in pediatric severe aplastic anemia: Experience with TCR alpha/beta and CD19 depletion as graft processing method.

Maschan M, Shelikhova L, Balashov D, Kurnikova E, Boyakova E, Kalinina V, Skvortsova Y, Gutovskaya E, Tsetlina V, Khismatullina R, Trakhtman P, Novichkova G, Maschan A.
BMT 2014 Mar;49 Suppl1: 124.

Results of HLA-haploidentical stem cell transplantation after removal of alpha/beta+ T cells and of CD19+ B cells in children with acute leukemia.

Bertaina A, Pagliara D, Pende D, Rutella S, Emma Falco M, Bauquet A, Spagnoli A, Lucarelli B, Pomponia Brescia L, Merli P, Andreani M, Li Pira G, Ceccarelli S, Grapulin L, Palumbo G, Bernardo ME, Biagini S, Moretta F, Maria Milano G, Airolidi I, Moretta A, Moretta L, Locatelli F.
BMT 2014 Mar; 49 Suppl1: 58.

At the Bedside: Innate immunity as an immunotherapy tool for hematological malignancies.

Locatelli F, Merli P, Rutella S.
J Leukoc Biol. 2013 Dec;94(6):1141-57. doi: 10.1189/jlb.0613343. Epub 2013 Oct 4.

At the Bench: Preclinical rationale for exploiting NK cells and γδ T lymphocytes for the treatment of high-risk leukemias.

Norell H, Moretta A, Silva-Santos B, Moretta L.
J Leukoc Biol. 2013 Dec;94(6):1123-39. doi: 10.1189/jlb.0613312. Epub 2013 Oct 9.

Haploidentical TCRab Depleted Hematopoietic Cell Transplantation Leads To Rapid Immune Reconstitution and Promising Clinical Outcome In Adults

Haen SP, Schumm M, Vogel W, Faul C, Handgretinger R, Kanz L, Bethge WA.
Blood (ASH Annual Meeting Abstracts). 2013 Nov;122: 5475

Graft TCR-Alpha/Beta Depletion and Peri-Transplant Use Of Eculizumab In Matched Unrelated Donor Transplantation For Severe Aplastic Anemia-Paroxysmal Nocturnal Hemoglobinuria: Report Of Two Cases

Maschan M, Shelikhova L, Kurnikova E, Boyakova E, Levadnyy A, Muzalevskii Y, Bobrynina V, Kalinina V, Kalinina I, Baidildina D, Balashov D, Novichkova G, Maschan A.
Blood (ASH Annual Meeting Abstracts). 2013 Nov;122: 4870

Haploidentical Stem Cell Transplantation After Negative Depletion Of T Cells Expressing The $\alpha\beta$ Chain Of The T-Cell Receptor (TCR) For Adults With Hematological Malignancies

Prezioso L, Bonomini S, Lambertini C, Schifano C, Rossetti E, Monti A, Todaro G, Sammarelli G, Sassi M, Craviotto L, Masselli E, Caramatti C, Aversa F. Blood (ASH Annual Meeting Abstracts). 2013 Nov;122:4609

Recovery Of Gamma/Delta+ T Cells After Transplantation With Alpha-Beta+/CD19+ Lymphocyte Depleted Hematopoietic Stem Cells From HLA-Haploidentical Donors

Airoidi I, Prigione I, Bertaina A, Cocco C, Pagliara D, Zorzoli A, Rutella S, Pinto RM, Pistoia V, Masetti R, Romano M, Di Florio F, Del Bufalo F, Moretta L, Locatelli F. Blood (ASH Annual Meeting Abstracts). 2013 Nov;122:3245

Haploidentical Transplantation As Salvage Therapy For Disease Relapse After Allogeneic Hematopoietic Cell Transplantation

Dorn C, Haen SP, Faul C, Vogel W, Kanz L, Bethge WA. Blood (ASH Annual Meeting Abstracts). 2013 Nov;122:2084

Feasibility Of $\alpha\beta$ T- Cell Depleted Allogeneic Stem Cell Transplantations From Matched Related and Unrelated Donor Grafts and Engraftment In Patients With Poor Risk Leukemia

te Boome L, van der Wagen L, Westinga K, Slaper-Cortenbach I, Kuball JH. Blood (ASH Annual Meeting Abstracts). 2013 Nov;122:2063

Transplantation Of TcR $\alpha\beta$ /CD19 Depleted Stem Cells From Haploidentical Donors In Children: Current Results

Lang P, Feuchtinger T, Teltschik HM, Schumm M, Schlegel P, Pfeiffer M, Ebinger M, Schwarze CP, Handgretinger R. Blood (ASH Annual Meeting Abstracts). 2013 Nov;122:692

Removal Of Alpha/Beta+ T Cells and Of CD19+ B Cells From The Graft Translates Into Rapid Engraftment, Absence Of Visceral Graft-Versus-Host Disease and Low Transplant-Related Mortality In Children With Acute Leukemia Given HLA-Haploidentical Hematopoietic Stem Cell Transplantation

Bertaina A, Pagliara D, Pende D, Rutella S, Falco M, Bauquet A, Contoli B, Lucarelli B, Brescia LP, Merli P, Andreani M, Li Pira G, Ceccarelli S, Grapulin L, Palumbo G, Bernardo ME, Biagini S, Moretta F, Milano GM, Airoidi I, Moseley A, Moretta A, Moretta L, Locatelli F. Blood (ASH Annual Meeting Abstracts). 2013 Nov;122:157

Haploidentical paternal TCR alpha beta and CD19 depleted stem cell transplant for Wiskott Aldrich syndrome with disseminated cytomegalovirus infection

Kharya G, Nademi Z, Leahy R, Brigham K, Barge D, Schulz A, Hambleton S, Abinun M, Flood T, Cant AJ, Gennery A, Slatter M. BMT. 2013 Apr;48 Suppl 1:P682

From CD34 positive selection to negative depletion approaches of CD3 and T-cell receptor (TcR)alpha beta T lymphocytes in haploidentical transplant in thalassemia patients

Sodani P, Isgrò A, Marziali M, Gaziev J, Paciaroni K, Roveda A, Alfieri C, De angelis G, Gallucci C, Torelli F, Cardarelli L, Ribersani M, Adorno G, Lanti A, Lucarelli G. BMT. 2013 Apr;48 Suppl 1:P683

Development of gammadelta T-cell receptor repertoire after TCRab/CD19 depleted haploidentical stem cell transplantation in children

Eyrich M, Wöfl M, Ruf K, Herbst M, Braun M, Winkler B, Wiegering V, Schlegel PG. BMT. 2013 Apr;48 Suppl 1:P587

HLA haploidentical stem cell transplantation after removal of alpha/beta+ T-lymphocytes and B-lymphocytes: a new transplant option for children with life-threatening, non-malignant disorders lacking a HLA-identical donor

Bertaina A, Messina C, Masetti R, Romano M, Rutella S, Bauquet A, Pagliara D, Gazzola MV, Pende D, Ceccarelli S, Tumino M, Brescia LP, Li Pira G, Bernardo ME, Milano GM, Palumbo G, Falco M, Moretta L, Locatelli F. BMT. 2013 Apr;48 Suppl 1:O335

Characterization of haploidentical stem cell grafts after negative depletion of B-cells and alpha/beta+ T cells

Li Pira G, Landi F, Filippini P, Bertaina A, Ceccarelli S, Del Principe G, Pagliara D, Girardi K, Romano M, Pinto RM, Locatelli F, Rutella S. BMT. 2013 Apr;48 Suppl 1:O194

Cellular and molecular basis of haploidentical hematopoietic stem cell transplantation in the successful treatment of high-risk leukemias: role of alloreactive NK cells.

Locatelli F, Pende D, Mingari MC, Bertaina A, Falco M, Moretta A, Moretta L. Front Immunol. 2013;4:15. doi: 10.3389/fimmu.2013.00015. Epub 2013 Feb 1.

HLA Haploidentical Stem Cell Transplantation After Removal of $\alpha\beta^+$ T Lymphocytes and B Lymphocytes Is an Effective Treatment for Children with Life-Threatening, Non-Malignant Disorders

Bertaina A, Romano M, Rutella S, Palumbo G, Pagliara D, Ceccarelli S, Brescia LP, Li Pira G, Cocco F, Bernardo ME, Milano GM, Pende D, Falco M, Moretta L, Locatelli F.

Blood (ASH Annual Meeting Abstracts). 2012 Nov;120:2018.

Negative Depletion of B Cells and T Cells Expressing the $\alpha\beta$ Chain of the T-Cell Receptor (TCR) for Haploidentical Stem Cell Transplantation

Li Pira G, Landi F, Filippini P, Giustiniani P, Bertaina A, Pagliara D, Pinto RM, Girardi K, Del Principe G, Ceccarelli S, Locatelli F, Rutella S.

Blood (ASH Annual Meeting Abstracts). 2012 Nov;120:343.

Negative depletion of CD3⁺ and TcR $\alpha\beta$ ⁺ T cells.

Handgretinger R.

Curr Opin Hematol, Nov 2012; 19(6): 434-9.

Immune reconstitution and strategies for rebuilding the immune system after haploidentical stem cell transplantation.

Oevermann L, Lang P, Feuchtinger T, Schumm M, Teltschik HM, Schlegel P, Handgretinger R.

Ann N Y Acad Sci. 2012 Aug;1266(1):161-70. doi: 10.1111/j.1749-6632.2012.06606.x.

Transplantation of TCRalpha/beta/CD19 depleted stem cells from haploidentical donors: robust engraftment and rapid immune reconstitution in children with high-risk leukaemia

Locatelli F, Lang P, Bernardo ME, Feuchtinger T, Rutella S, Bertaina A, Schumm M, Teltschik HM, Schulz AS, Moretta A, Caniglia M, Zinno F, Moretta L, Handgretinger R.

BMT. 2012 Apr;47 Suppl 1:O132

TCR alpha/beta and B-cell depleted haploidentical haematopoietic stem cell transplantation in severe aplastic anaemia in children: a case report

Tumino M, Pillon M, Calore E, Buldini B, Gazzola MV, Destro R, Varotto S, Strano A, Winzler C, Basso G, Messina C.

BMT. 2012 Apr;47 Suppl 1:P665

Transplantation of TcR $\alpha\beta$ /CD19 Depleted Stem Cells From Haploidentical Donors: Robust Engraftment and Rapid Immune Reconstitution In Children with High Risk Leukemia. Handgretinger R, Lang P, Feuchtinger TF, Schumm M, Teltschik HM, Schulz AS, Huppert V, Moretta L, Moretta A, Bernardo ME, Caniglia M, Bertaina A, Zinno F, Locatelli F.

First clinical results with alpha-beta⁺ T-cell depleted haplo-identical stem cells in children.

Lang P, Schumm M, Teltschik HM, Feuchtinger T, Pfeiffer M, Schilbach K, Handgretinger R. N.A.

2 Technical performance and functionality data only

Expansion and Enrichment of Gamma-Delta ($\gamma\delta$) T Cells from Apheresed Human Product

Landin AM, Cox C, Yu B, Bejanyan N, Davilla M, Kelley L. Jove 2021;

doi: 10.3791/62622

Depletion of $\alpha\beta^+$ T and B cells using the CliniMACS Prodigy: Results of 10 graft-processing procedures from haploidentical donors

Haastrup E, Ifversen M RS, Heimann C, Fischer-Nielsen A Transfus Med Hemother 2019;

doi: 10.1159/000497074

GMP-grade manufacturing of T cells engineered to express a defined $\gamma\delta$ TCR

Straetemans T, Kierkels GJJ, Doom R, Jansen K, Heijhuurs S, dos Santos JM, van Muyden ADD, Clemenceau HVB, Raymakers R, de Witte M, Sebestyen Z, Kuball J.

Frontiers in Immunology.2018;9:1062

Clinical-scale manufacturing of $\gamma\delta$ T cells for protection against infection and disease recurrence following haploidentical peripheral blood stem cell transplantation and cyclophosphamide gvhd prophylaxis

Lamb LS, Pillai S, Langford S, Browersock J, Di Stasi A, Saad A.

BMT 2018; 53:766-769

Depletion of T-cell receptor alpha/beta and CD19 positive cells from apheresis products with the CliniMACS device.

Schumm M, Lang P, Bethge W, Faul C, Feuchtinger T, Pfeiffer M, Vogel W, Huppert V, Handgretinger R.

Cytotherapy. 2013 Oct;15(10):1253-8. doi:

10.1016/j.jcyt.2013.05.014.

Depletion of alpha/beta T-cells as a platform for graft processing in haploidentical and unrelated transplantation

Kurnikova E, Boyakova E, Shelikhova L, Trakhtman P, Balashov D, Skvortsova Y, Maschan A, Maschan M.

BMT. 2013 Apr;48 Suppl 1:P679

Effective TcR alpha/beta+ cell depletion using the CliniMACS® system to produce peripheral blood progenitor cell products for haploidentical transplantation

Dykes J, Hult A, Toporski J, Lenhoff S, Scheduling S, Turkiewicz D.
BMT. 2013 Apr;48 Suppl 1:P677

Human Peripheral CD34+ γ δ T Cells Can Transdifferentiate into $\alpha\beta$ T Cells.

Ziegler H, Haarer J, Sterk M, Rammensee HG, Handgretinger R, Schilbach K
Blood (ASH Annual Meeting Abstracts), Nov 2012; 120: 2312.

Overview of T-cell depletion in haploidentical stem cell transplantation.

N Daniele, MC Scerpa, M Caniglia, C Ciammetti, C Rossi, ME Bernardo, F Locatelli, G Isacchi, and F Zinno
Blood Transfus, Jul 2012; 10(3): 264-72.

Transplantation in the onco-hematology field: Focus on the manipulation of $\alpha\beta$ and $\gamma\delta$ T cells.

Daniele N, Scerpa MC, Caniglia M, Bernardo ME, Rossi C, Ciammetti C, Palumbo G, Locatelli F, Isacchi G, Zinno F.
Pathol Res Pract. 2011 Nov 22. [Epub ahead of print]

Depletion of TcRab+ and CD19-positive cells from leukapheresis products with the CliniMACS device.

Schumm M, Lang P, Bethge W, Vogel W, Faul C, Feuchtinger T, Pfeiffer M, Handgretinger R.
BMT. 2011 Apr;46 Suppl 1:P1093

A large-scale method for the selective depletion of $\alpha\beta$ T lymphocytes from PBSC for allogeneic transplantation.

Chaleff S, Otto M, Barfield RC, Leimig T, Iyengar R, Martin J, Holiday M, Houston J, Geiger T, Huppert V, Handgretinger R.
Cytotherapy. 2007;9(8):746-54. Epub 2007 Oct 4.

3 Reviews

T-cell depleted haploidentical hematopoietic cell transplantation for pediatric malignancy

Takahashi T, Prockop S. FronPed 2022; doi:10.3389/fped.2022.987220

Contemporary haploidentical stem cell transplant strategies in children with hematological malignancies

Shah RM Bone Marrow Trans 2021; doi.org/10.1038/s41409-021-01246-5

Death after hematopoietic stem cell transplantation: changes over calendar year time, infections and associated factors

Stycynski J, Tridello G, Koster L, Iacobelli S, van Biezen A, van der Werf S, Mikulska M, Gil L, Cordonnier C, Ljungman P, Averbruch D, Cesaro S, Camara R, Baldomero H, Bader P, Basak G, Bonini C, Duarte R, Dufour C, Kuball J, Lankester A, Montono S, Nagler A, Snowden JA, Kröger N, Mothy M, Gratwohl A. BMT. 2020; doi.org/10.1038/s41409-019-0624-z

Editorial: $\gamma\delta$ T cells in cancer

Coffelt SB, Kabelitz D, Silva-Santos B, Kuball J, Born W, Bank I. frontiers in Immunol. 2020; doi: 10.3389/fimmu.2020.602411

Improved survival rate in T-cell depleted haploidentical hematopoietic cell transplantation over the last 15 years at 1 single institution

Mamcarz E, Madden R, Qudeimat A, Srinivasan A, Talleur A, Sharma A, Suliman A, Maron G, Sunkara A, kang G, Leung W, Gottschalk S, Triplett BM. BMT 2020; doi:10.1038/s41409-019-0750-7

The complex existence of $\gamma\delta$ T cells following transplantation: the good, the bad and the simply confusing

Sullivan LC, Shaw EM, Stankovic S, Snell GI, Brooks AG, Westall GP Clinical & Translational Immunol. 2019; 8:e1078; doi: 10.1002/cti2.1078

Impact of $\gamma\delta$ T cells on clinical outcome of hematopoietic stem cell transplantation: systematic review and meta-analysis

Arruda LCM, Gaballa A, Uhlin M. Blood advances DOI 10.1182/bloodadvances.2019000682.

Graft Engineering and Adoptive Immunotherapy: New approaches to promote immune tolerance after hematopoietic stem cell transplantation

Bertaina A, Roncarolo MG. Front. Immunol. 2019, doi: 10.3389/fimmu.2019.01342

TCR $\alpha\beta$ +CD19+ cell depletion in haploidentical hematopoietic allogeneic stem cell transplantation: a review of current data

Sashasrabudhe K, Otte M, Hematti P, Kenkre VJ
Leuk Lymphoma 2018, 6:1-12

Human $\gamma\delta$ T cells: From Surface Receptors to the therapy of high-risk leukemias

Pistoia V, Tumino N, Vacca P, Veneziani I, Moretta A, Locatelli F, Moretta L.

Frontiers in Immunology. 2018; 9:984

The potential role of $\gamma\delta$ T cells after allogeneic HCT for leukemia

Handgretinger R, Schilbach K

Blood. 2018 March; doi:10.1007/s11899-017-0364-3

T cell-depleted and T cell-replete HLA-haploidentical Stem cell transplantation for non-malignant disorders

Bertaina A, Pitisci A, Sinibaldi M, Algeri M

Curr Hematol Malig Rep. 2017 Jan;

doi:10.1007/s11899-017-0364-3

Recent advances in haploidentical hematopoietic stem cell transplantation using ex vivo T cell-depleted graft in children and adolescents

Im HJ, Koh K-N, Seo JJ

Blood Res . 2016 Mar; 51:8-16.

dx.doi.org/10.5045/br.2016.51.1.8.

Haploidentical Hematopoietic Stem Cell Transplantation as a Platform for Post-Transplantation Cellular Therapy

Kongtim P, Lee DA, Cooper LJN, Kebriaei P, Champlin RE, Ciurea SO

BBMT 2015 Mar; 21:1714-1720.

dx.doi.org/10.1016/j.bbmt.2015.07.002

Haplo is the new black.

Pulsipher MA.

Blood. 2014 Jul 31;124(5):675-6. doi: 10.1182/blood-2014-06-579714.

At the Bedside: Innate immunity as an immunotherapy tool for hematological malignancies.

Locatelli F, Merli P, Rutella S.

J Leukoc Biol. 2013 Dec;94(6):1141-57. doi:

10.1189/jlb.0613343. Epub 2013 Oct 4.

At the Bench: Preclinical rationale for exploiting NK cells and $\gamma\delta$ T lymphocytes for the treatment of high-risk leukemias.

Norell H, Moretta A, Silva-Santos B, Moretta L.

J Leukoc Biol. 2013 Dec;94(6):1123-39. doi:

10.1189/jlb.0613312. Epub 2013 Oct 9.

Six-of-the-best: unique contributions of $\gamma\delta$ T cells to immunology.

Vantourout P, Hayday A.

Nat Rev Immunol. 2013 Feb;13(2):88-100. doi:

10.1038/nri3384. Review.

Human $\gamma\delta$ T lymphocytes for immunotherapeutic strategies against cancer.

Kabelitz D.

F1000 Med Rep. 2010 Jun 23;2. pii: 45.

Gammadelta T cell modulation in anticancer treatment.

Caccamo N, Dieli F, Meraviglia S, Guggino G, Salerno A.

Curr Cancer Drug Targets. 2010 Feb 1;10(1):27-36.

Review.

Aminobisphosphonate-activated gammadelta T cells in immunotherapy of cancer: doubts no more.

Caccamo N, Meraviglia S, Scarpa F, La Mendola C, Santini D, Bonanno CT, Misiano G, Dieli F, Salerno A.

Expert Opin Biol Ther. 2008 Jul;8(7):875-83. Review.

Human $\gamma\delta$ T cells – Candidates for the Development of Immunotherapeutic Strategies.

Beetz S, Marischen L, Kabelitz D, Wesch D.

Immunologic Research. 2007 37(2):97-111

Perspectives of gammadelta T cells in tumor immunology.

Kabelitz D, Wesch D, He W.

Cancer Res. 2007 Jan 1;67(1):5-8. Review.

The function of gammadelta T cells in innate immunity.

Born WK, Reardon CL, O'Brien RL.

Curr Opin Immunol. 2006 Feb;18(1):31-8. Epub 2005

Dec 6. Review.

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