

## Cover Figure

Three-dimensional models of immunoglobulins with relevant mutations reported in a ball-and-stick representation. This illustration is taken from the Brief Report by Zibellini et al on page 1792

## Editorials and Perspectives

- 1621 **Generation of mature blood cells from pluripotent stem cells**  
*Igor I. Slukvin*
- 1623 **IDH1 and IDH2 mutations in myeloid neoplasms – Novel paradigms and clinical implications**  
*Mario Cazzola*
- 1627 **CD30<sup>+</sup> lymphoproliferative disorders**  
*Laurence de Leval and Philippe Gaulard*
- 1630 **Prophylaxis of invasive fungal diseases in patients with hematologic disorders**  
*Corrado Girmenia*

## Original Articles

- 1633 **Hematopoietic Stem Cells**  
**Transcriptional silencing of the ETS1 oncogene contributes to human granulocytic differentiation**  
*Valentina Lulli, Paolo Romania, Roberta Riccioni, Alessandra Boe, Francesco Lo-Coco, Ugo Testa, and Giovanna Marziali*
- 1642 **Hematopoietic Stem Cells**  
**Cdx4 is dispensable for murine adult hematopoietic stem cells but promotes MLL-AF9-mediated leukemogenesis**  
*Sumin Koo, Brian J. Huntly, Yuan Wang, Jing Chen, Kristina Brumme, Brian Ball, Shannon L. McKinney-Freeman, Akiko Yabuuchi, Claudia Scholl, Dimple Bansal, Leonard I. Zon, Stefan Fröhling, George Q. Daley, D. Gary Gilliland, and Thomas Mercher*
- 1651 **Erythropoiesis**  
**Red blood cell generation from human induced pluripotent stem cells: perspectives for transfusion medicine**  
*Hélène Lapillonne, Ladan Kobari, Christelle Mazurier, Philippe Tropel, Marie-Catherine Giarratana, Isabelle Zanella-Cleon, Laurent Kiger, Marie Wattenhofer-Donzé, Hélène Puccio, Nicolas Hebert, Alain Francina, Georges Andreu, Stéphane Viville, and Luc Douay*

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### Disorders of Iron Metabolism

**Severe iron deficiency blunts the response of the iron regulatory gene *Hamp* and pro-inflammatory cytokines to lipopolysaccharide**  
*Deepak Darshan, David M. Frazer, Sarah J. Wilkins and Gregory J. Anderson*

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### Myelodysplastic Syndromes

**IDH1 mutations in patients with myelodysplastic syndromes are associated with an unfavorable prognosis**  
*Felicitas Thol, Eva M. Weissinger, Jürgen Krauter, Katharina Wagner, Frederik Damm, Martin Wichmann, Gudrun Göhring, Christiane Schumann, Gesine Bug, Oliver Ottmann, Wolf-Karsten Hofmann, Brigitte Schlegelberger, Arnold Ganzer, and Michael Heuser*

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### Acute Lymphoblastic Leukemia

**Expression of miR-196b is not exclusively MLL-driven but is especially linked to activation of HOXA genes in pediatric acute lymphoblastic leukemia**  
*Diana Schotte, Ellen A.M. Lange-Turenhout, Dominique J.P.M. Stumpel, Ronald W. Stam, Jessica G.C.A.M. Buijs-Gladdines, Jules P.P. Meijerink, Rob Pieters, and Monique L. Den Boer*

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### Acute Lymphoblastic Leukemia

**The PAX5 gene is frequently rearranged in BCR-ABL1-positive acute lymphoblastic leukemia but is not associated with outcome. A report on behalf of the GIMEMA Acute Leukemia Working Party**  
*Ilaria Iacobucci, Annalisa Lonetti, Francesca Paoloni, Cristina Papayannidis, Anna Ferrari, Clelia Tiziana Storlazzi, Marco Vignetti, Daniela Cilloni, Francesca Messa, Viviana Guadagnuolo, Stefania Paolini, Loredana Elia, Monica Messina, Antonella Vitale, Giovanna Meloni, Simona Soverini, Fabrizio Pane, Michele Baccarani, Robin Foà, and Giovanni Martinelli*

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### Hodgkin's Lymphoma

**Utility of bone marrow biopsy at diagnosis in pediatric Hodgkin's lymphoma**  
*Melissa R. Hines-Thomas, Scott C. Howard, Melissa M. Hudson, Matthew J. Krasin, Sue C. Kaste, Barry L. Shulkin, and Monika L. Metzger*

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### Malignant Lymphomas

**Disturbed expression of the T-cell receptor/CD3 complex and associated signaling molecules in CD30<sup>+</sup> T-cell lymphoproliferations**  
*Eva Geissinger, Petra Sadler, Sabine Roth, Tina Grieb, Bernhard Puppe, Nora Müller, Peter Reimer, Claudia S. Vetter-Kauczok, Jörg Wenzel, Irina Bonzheim, Thomas Rüdiger, Hans Konrad Müller-Hermelink, and Andreas Rosenwald*

- 1705** **Lymphoproliferative Disorders**  
Prognostic factors identified three risk groups in the LRF CLL4 trial, independent of treatment allocation  
*David Oscier, Rachel Wade, Zadie Davis, Alison Morilla, Giles Best, Sue Richards, Monica Else, Estella Matutes, and Daniel Catovsky, for the UK National Cancer Research Institute (NCRI) Chronic Lymphocytic Leukaemia Working Group*

- 1713** **Lymphoproliferative Disorders**  
*MICA* polymorphism identified by whole genome array associated with NKG2D-mediated cytotoxicity in T-cell large granular lymphocyte leukemia  
*Aaron D. Viny, Michael J. Clemente, Monika Jasek, Medhat Askar, Hemant Ishwaran, Amy Nowacki, Aiwen Zhang, and Jaroslaw P. Maciejewski*

- 1722** **Lymphoproliferative Disorders**  
Lack of expression of inhibitory KIR3DL1 receptor in patients with natural killer cell-type lymphoproliferative disease of granular lymphocytes  
*Cristina Gattazzo, Antonella Teramo, Marta Miorin, Elisa Scquizzato, Anna Cabrelle, Mirna Balsamo, Carlo Agostini, Elena Vendrame, Monica Facco, Maria Paola Albergoni, Livio Trentin, Massimo Vitale, Gianpietro Semenzato, and Renato Zambello*

- 1730** **Multiple Myeloma**  
Identification of translocation products but not K-RAS mutations in memory B cells from patients with multiple myeloma  
*Thomas Rasmussen, Jacob Haaber, Inger Marie Dahl, Lene M. Knudsen, Gitte B. Kerndrup, Marianne Lodahl, Hans E. Johnsen, and Michael Kuehl*

- 1738** **Multiple Myeloma**  
Better quality of response to lenalidomide plus dexamethasone is associated with improved clinical outcomes in patients with relapsed or refractory multiple myeloma  
*Jean-Luc Harousseau, Meletios A. Dimopoulos, Michael Wang, Alessandro Corso, Christine Chen, Michel Attal, Andrew Spencer, Zhinuan Yu, Marta Olesnyckyj, Jerome B. Zeldis, Robert D. Knight, and Donna M. Weber*

- 1745** **Platelet Disorders**  
Platelet-derived growth factor enhances platelet recovery in a murine model of radiation-induced thrombocytopenia and reduces apoptosis in megakaryocytes via its receptors and the PI3-k/Akt pathway  
*Jie Yu Ye, Godfrey Chi Fung Chan, Liang Qiao, Qizhou Lian, Fan Yi Meng, Xue Qun Luo, Levon M. Khachigian, Ming Ma, Ruixia Deng, Jian Liang Chen, Beng H. Chong, and Mo Yang*

- 1754** **Allogeneic Stem Cell Transplantation**  
Value of allogeneic versus autologous stem cell transplantation and chemotherapy in patients with myelodysplastic syndromes and secondary acute myeloid leukemia. Final results of a prospective randomized European Intergroup Trial  
*Theo de Witte, Anne Hagemeijer, Stefan Suciu, Amin Belhabri, Michel Delforge, Guido Kobbe, Dominik Selleslag, Harry C. Schouten, Augustin Ferrant, Harald Biersack, Sergio Amadori, Petra Muus, Joop H. Jansen, Eva Hellström-Lindberg, Tibor Kovacs, Pierre Wijermans, Gert Ossenkoppele, Alois Gratwohl, Jean-Pierre Marie, and Roel Willemze*

- 1762** **Infectious Disorders**  
Voriconazole for secondary prophylaxis of invasive fungal infections in allogeneic stem cell transplant recipients: results of the VOSIFI study  
*Catherine Cordonnier, Montserrat Rovira, Johan Maertens, Eduardo Olavarria, Catherine Faucher, Karin Bilger, Arnaud Pigneux, Oliver A. Cornely, Andrew J. Ullmann, Rodrigo Martino Bofarull, Rafael de la Cámara, Maja Weisser, Effie Liakopoulou, Manuel Abecasis, Claus Peter Heussel, Marc Pineau, Per Ljungman, and Hermann Einsele on behalf of the Voriconazole for Secondary Prophylaxis of Invasive Fungal Infections in Patients With Allogeneic Stem Cell Transplants (VOSIFI) study group and the Infectious Diseases Working Party of the European Group for Blood and Marrow Transplantation (EBMT)*

## Review Article

- 1769** **Cell Therapy and Immunotherapy**  
The interplay between Epstein-Barr virus and the immune system: a rationale for adoptive cell therapy of EBV-related disorders  
*Anna Merlo, Riccardo Turrini, Riccardo Dolcetti, Debora Martorelli, Elena Muraro, Patrizia Comoli, and Antonio Rosato*

## Brief Reports

- 1778** **Immunodeficiency Syndromes**  
Role of reduced intensity conditioning in T-cell and B-cell immune reconstitution after HLA-identical bone marrow transplantation in ADA-SCID  
*Caterina Cancrini, Francesca Ferrua, Alessia Scarselli, Immacolata Brigida, Maria Luisa Romiti, Graziano Barera, Andrea Finocchi, Maria Grazia Roncarolo, Maurizio Caniglia, and Alessandro Aiuti*

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### Fanconi Anemia

Fertility recovery and pregnancy after allogeneic hematopoietic stem cell transplantation in Fanconi anemia patients

Samir K. Nabhan, Marco A. Bitencourt, Michel Duval, Manuel Abecasis, Carlo Dufour, Karim Boudjedir, Vanderson Rocha, Gérard Socié, Jakob Passweg, Kumiko Goi, Jean Sanders, John Snowden, Hiromasa Yabe, Ricardo Pasquini, and Eliane Gluckman on behalf of the Aplastic Anaemia Working Party, EBMT

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### Myeloproliferative Neoplasms

Thrombosis in myelofibrosis: prior thrombosis is the only predictive factor and most venous events are provoked

Michelle Ann Elliott, Animesh Pardhanani, Terra L. Lasho, Susan M. Schwager, and Ayalew Tefferi

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### Malignant Lymphomas

Stereotyped patterns of B-cell receptor in splenic marginal zone lymphoma

Silvia Zibellini, Daniela Capello, Francesco Forconi, Paolo Marcatili, Davide Rossi, Sara Rattotti, Silvia Franceschetti, Elisa Sozzi, Emanuele Cencini, Roberto Marasca, Luca Baldini, Alessandra Tucci, Francesco Bertoni, Francesco Passamonti, Ester Orlandi, Marzia Varettoni, Michele Merli, Silvia Rizzi, Valter Gattei, Anna Tramontano, Marco Paulli, Gianluca Gaidano, and Luca Arcaini

## Letters to the Editor

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### Myeloproliferative Neoplasms

IDH1 R132H mutation is a rare event in myeloproliferative neoplasms as determined by a mutation specific antibody

Mindaugas Andriulis, David Capper, Jochen Meyer, Roland Penzel, Christian Hartmann, Hanswalter Zentgraf, and Andreas von Deimling

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### Myeloid Neoplasms

TET2 gene is not deleted in chronic myelomonocytic leukemia: a FISH retrospective study

Mar Mallo, Gemma Osca, Julia Solórzano, Leonor Arenillas, Lourdes Florensa, and Francesc Solé

## Errata

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### Erratum

Bleeding symptoms in heterozygous factor VIII deficiency

Pier Mannuccio Mannucci  
Haematologica, Vol 95, Issue 9, e6  
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## Continuing Medical Education

Combined therapy with lenalidomide plus dexamethasone in patients with relapsed or refractory multiple myeloma

Types of stem cell transplants and chemotherapy in patients with myelodysplastic syndromes and secondary acute myeloid leukemia

Bone marrow biopsy in pediatric Hodgkin's lymphoma

Prognostic significance of IDH1 mutations in patients with myelodysplastic syndromes