Division of Experimental Hematology

DIVISION PROFILE	
Number of Faculty	29
Number of Joint Appointment Faculty	11
Number of Fellows	
Clinical Fellows	2
Research Fellows	36
Number of Graduate Students	19
Number of Other Students (full and part-time)	26
Number of Support Personnel	73
Annual Total Grant Support (direct)	$5,912,596
Annual Total Industry Contracts (direct)	$4,182
Number of Peer Reviewed Publications	74

FACULTY LISTING

David A. Williams, MD, Professor of Pediatrics, Beatrice C. Lampkin Chair and Professor of Pediatrics; Director, Division of Experimental Hematology; Associate Chair for Translational Research
Paul Andreassen, PhD, Assistant Professor of Pediatrics
Christopher Baum, MD, Adjunct Associate Professor of Pediatrics
Jose Cancelas, MD, PhD, Research Associate Professor of Pediatrics, Director, Flow Core; Director of Research, Hoxworth Blood Center
Timothy Cripe, MD, PhD, Associate Professor of Pediatrics, Director, Musculoskeletal Tumor Comprehensive Clinic; Director, Translational Research Trials Office
Timothy Crombleholme, MD, Professor of Surgery, Director, Center for Molecular Fetal Surgery
Stella Davies, MB, BS, PhD, MRCP, Professor of Pediatrics, Jacob G. Schmidlapp Endowed Chair; Director, Blood and Marrow Transplantation Program; Program Leader, Leukemia Biology Program
Jorge DiMartino, MD, PhD, Adjunct Assistant Professor of Pediatrics
Marie-Dominique Filippi, PhD, Assistant Professor of Pediatrics
Hartmut Geiger, PhD, Assistant Professor of Pediatrics
Yi Gu, PhD, Assistant Professor of Pediatrics
Fukun Guo, PhD, Research Instructor of Pediatrics
Michael Jansen, PhD, Research Instructor of Pediatrics
Theodosia Kalfa, MD, PhD, Research Instructor of Pediatrics
Patrick Kelly, MD, Assistant Professor of Pediatrics
Thomas Leemhuis, PhD, Associate Professor of Clinical Pediatrics, Director, Cellular Therapies, Hoxworth Blood Center
Ruhikanta Meetei, PhD, Assistant Professor of Pediatrics
Shyra Miller, PhD, Assistant Professor of Pediatrics
Thomas Moritz, MD, Adjunct Associate Professor of Pediatrics
James Mulloy, PhD, Assistant Professor of Pediatrics
Dao Pan, PhD, Assistant Professor of Pediatrics
Qishen Pang, PhD, Assistant Professor of Pediatrics
Nancy Ratner, PhD, Professor of Pediatrics, Program Leader, Cancer Biology Program
Lilith Reeves, MS, Associate Professor of Pediatrics, Director, Translational Cores
Tilat Rizvi, PhD, Assistant Professor of Pediatrics
Han van der Loo, PhD, Assistant Professor of Pediatrics, Director, Vector Production Facility
Christof von Kalle, MD, Adjunct Associate Professor of Pediatrics, Program Leader, Gene and Molecular Therapy Program
Susanne Wells, PhD, Assistant Professor of Pediatrics
Yi Zheng, PhD, Professor of Pediatrics, Katie Stewart Waters Endowed Chair; Program Leader, Signaling Program

FACULTY JOINT APPOINTMENT LISTING

Christopher Baum, MD, Adjunct Associate Professor of Pediatrics, Experimental Cell Therapy, Hannover Medical School, (Germany)
Jose Cancelas, MD, PhD, Research Associate Professor of Pediatrics, Hoxworth Blood Center
Timothy Cripe, MD, PhD, Associate Professor of Pediatrics, Division of Hematology/Oncology
Timothy Crombleholme, MD, Professor of Surgery, Department of Surgery
Stella Davies, MB, BS, PhD, Jacob G. Schmidlapp Chair and Professor of Pediatrics, Division of Hematology/Oncology
Jorge DiMartino, MD, PhD, Adjunct Assistant Professor of Pediatrics, Genentech (California)
Theodosia Kalfa, MD, PhD, Research Instructor of Pediatrics, Division of Hematology and Oncology
Tom Leemhuis, PhD, Associate Professor of Clinical Pediatrics, Hoxworth Blood Center
Thomas Moritz, MD, Adjunct Associate Professor of Pediatrics, Department of Internal Medicine (Cancer Research) University of Duisburg-Essen Medical School Germany
Christof von Kalle, MD, Assistant Professor of Pediatrics, National Center of Tumor Diseases (NCT) at the University Hospital Heidelberg and the German Cancer Center (DKFZ)
Susanne Wells, PhD, Adjunct Associate Professor of Pediatrics, Division of Hematology and Oncology

Left to Right: L. Reeves, D. Pan, S. Davies, D. Williams, R. Meetei, N. Ratner, Y. Gu, T. Rizvi (2nd row) J. Cancelas, T. Kalfa, M-D. Filippi, S. Wells, P. Malik, H. Geiger (3rd row) S. Miller, F. Guo, J. Mulloy (4th row) T. Leemhuis, Q. Pang, P. Andreassen, Y. Zheng, D. Rucknagel, H. van der Loo

OVERVIEW

The Division of Experimental Hematology (EH) is made up of 5 programs encompassing Signaling, Stem Cells, Leukemia Biology and Molecular and Gene Therapy and Cancer Biology, a shared program with the Division of Hematology/Oncology (H/O). Twenty-nine faculty now have primary or secondary appointments in the EH division. The EH Web site (http://www.cincinnatichildrens.org/research/div/exp-hematology/) provides significant information on the division activities. The division continues to facilitate scientific interactions via a weekly floor meeting organized by Dr. James Mulloy, a monthly external speaker seminar series co-administered with the Division of H/O and organized by Drs. Paul Andreassen and Michael Jordon (H/O) and an internal speaker seminar series administered with the Division of Immunobiology and organized by Dr. Marie-Dominique Filippi. Drs. Hartmut Geiger and Jose Cancelas are planning the 4th Annual Midwest Blood Club to be held in Cincinnati in the spring of 2007. Drs. Chris Baum, Christof v. Kalle, and David Williams are

organizing the 3rd Annual Stem Cell Clonality and Genotoxicity Retreat to be held in conjunction with the American Society of Hematology meeting in Orlando, Florida in December 2006.

The cores developed by EH continue to provide shared resources to a large number of faculty. For instance, the Vector Core has produced >1100 virus vector preparations for research purposes, over 300 products in developmental work related to large scale preps for clinical trials. In addition, the Vector Production Facility (VPF) is currently contracting to produce five clinical gene therapy trial products, including retrovirus and AAV vector productions, with other academic institutions and private companies. The Translational Research Trials Office (TRTO) is currently assisting in 48 clinical trials (19 EH, 17 H/O, 12 other divisions). Together with the Division of H/O, over 11 Investigator Initiated New Drug (IND) applications have been filed with the Food and Drug Administration (FDA) and two additional INDs are in process of development. The Translational Trials Development and Support Laboratory (TTDSL) provides vector integration analysis for multiple gene therapy trials around the world and has instituted “complementation assignment” for Fanconi anemia patients that has been utilized by scientists and physicians from across North America. Over 500 assays have been performed by the TTDSL to establish Fanconi anemia complementation group for Fanconi anemia patients from across North America. The Divisions of EH and H/O work closely together to enhance innovation in clinical trials and care delivery for children with serious blood diseases. This collaborative approach has been successful in facilitating the opening of a number of phase I trials in oncology, Fanconi anemia, sickle cell anemia and stem cell transplantation.

HIGHLIGHTS

The EH faculty continue to publish in a variety of peer-reviewed journals with over 74 articles published since the last annual report. Since 2003, EH faculty have published or co-authored 20 papers in top-tier journals, such as Science, Nature and Cell groups and New England Journal of Medicine. Grant funding continues to increase even in the setting of tightening NIH budgets. Grants have increased from $2.6 million to $7.9 million in total funding. Total funding in the Divisions of EH and H/O is now $12.4 million/year.

A major focus in the past year has been the recruitment of Dr. Punam Malik as the Program Leader of Molecular and Gene Therapy. Dr. Malik is a highly respected physician-scientist who cares for children with hematologic diseases. She has been recognized for her work in developing lentivirus vectors that express non-malignant globin genes. She is in the early stages of developing a gene therapy trial for patients with thalassemia. Dr. Malik has extensive NIH funding. She will be opening her laboratory in EH in September, 2006. EH faculty continue to play important roles in the area of gene therapy. Drs. Christof v. Kalle and Chris Baum both received the Langen Award of the Paul Ehrlich Institute. Dr. Baum received the Sir Hans Kreb Publication Award for his contribution published in Science. He was named President of the German Society of Gene Therapy. Dr. Malik received the Outstanding New Investigator Award from the American Society of Gene Therapy. Dr. Williams received the Frank Oski Award from the American Society of Pediatric Hematology/Oncology and the Donald Metcalf Award from the International Society of Experimental Hematology. He continues to serve as Editor-in-Chief of Molecular Therapy, the top-rated journal in the area of gene and molecular therapy.

As the Fanconi anemia program continues to successfully develop, members of the faculty of EH and H/O have developed and submitted to the NIH a program grant in this area entitled “Molecular Analysis and Translational Studies in Fanconi Anemia”. This program includes collaborative investigators from Rockefeller University, the University of Minnesota and the Universidade em Curitiba, in Curitiba, Brazil. Several innovative translational, phase I trials have been developed for patients with Fanconi anemia based on basic research in this program. These trials are facilitated by the Fanconi Anemia Comprehensive Care Center which is the largest, multi-disciplinary clinic for Fanconi anemia children in the world. Drs. Andreassen and Williams were invited to present lectures on Fanconi anemia at several international scientific meetings. Dr. Meetei was awarded a prestigious Junior Faculty Scholar Award by the American Society of Hematology.

The Cancer Biology Program has continued to develop rapidly. Dr. Ratner is PI of a grant funded by the Department of Defense which supports the international Neurofibromatosis Microarray Consortium. The consortium aims to assemble and facilitate a multi-experiment integrated dataset to conduct gene expression analysis using microarray of neurofibromatosis related tumors. Dr. Ratner also has brought together a group of investigators from the UC Genome Research Institute (Drs. Thomas, Kozma) and CCHMC (Drs. Ratner,

Cripe, Perentesis), and two outside sites, to form the Cincinnati Center for Neurofibromatosis Research. The goal of the group is to understand and block signaling pathways defects in Neurofibromatosis type 1. Dr. Wells work on human papillomavirus has led to a recent important paper in Molecular and Cellular Biology on the DEK oncoprotein. Dr. Ratner is serving on the NSD-B NIH study section and chairing the oversight panel for the DOD Program on Neurofibromatosis.

Another important focus of research in EH within the Cell Signaling and Stem Cell Biology Programs is Rho GTPases. Dr. Yi Zheng, using rational drug design, has identified a small molecule inhibitor of Rac GTPases, NSC23766, which appears to have important anti-cancer activity. The intellectual property associated with this compound has now been licensed to Amgen, Inc. and Drs. Zheng and Williams are collaborating with Amgen to develop new generation inhibitors based on the structure of the NSC compound. The study of mouse knock-outs of Rac and other Rho GTPases has led to significant new understanding of the role of the signaling molecules in blood cell development and function. These genetically modified animal models are also being utilized to define the roles of Rho GTPases in brain, eye, lung and heart development in collaboration with researchers in other divisions of CHMCC. Multiple high impact publications have resulted from this work. Dr. Theodosia Kalfa was one of two individuals to receive the Young Investigator Award from the American Society of Pediatric Hematology/Oncology for her work on Rho GTPases in red blood cell development.

TRAINING

Zsuzsanna Adam, PhD		University of Debrecen, Hungary
Abdulla Mahmood Ali, PhD		Indian Institute of Science, India
Heedon Chae, PhD		Pohang University of Science and Technology, South Korea
Saurabh Chandra, MD, PhD		MLN Medical College, India, Indiana State University
Marcella Debidda, PhD		University of Sassari, Italy
Changhu Du, MD, PhD		WanNan Medical College, Anhui, China Guangzhou Institute of Respiratory Disease, Guangzhou Medical College, China
Qiang Fan, PhD		Fudan University, Shanghai, China
Marnie Hall, PhD		University of Cincinnati College of Medicine, Cincinnati, OH
Ingrid Jurickova, MD		Charles University, Second Medical Faculty, Czech Republic
Ondrej Krejci, MD, PhD		2nd Medical School, Charles University, Czech Republic
Nithya Krishnan, PhD		University of Cincinnati College of Medicine, Cincinnati, OH
Matti Korhonen, MD		University of Helsinki, Helsinki, Finland
Gerlinde Layh Schmitt, PhD		University of Hohenheim, Stuttgart-Hohenheim, Germany
June Li, MD, PhD		Shanxi Medical University, China Second Medical Univesity and Shanghai Institute of Hematology, Ruijun Hospital, China
ShuShun Li, MD, PhD		Qingdao Medical College, Qiangdao, China Umea University, Umea and Karolinska Institute, Stockholm, Sweden
Anuj Mankad, PhD		Oregon Health and Science University, Portland, Oregon
Debra Mayes, PhD		University of Arkansas for Medical Sciences
Jaime Melendez, PhD		University of Chile, Santiago, Chile
Michael Milsom, PhD		University of Leeds, United Kingdom
Anjali Mishra, PhD		Kanpur University, Kanpur, India
Lars Muller MD	PGY-4	Heinrich-Heine University, Duesseldorf, Germany

Yoko Nakai, PhD		Keio University School of Medicine, Japan
Reena Rani, PhD		CSJM University, India
Ina Rattman, PhD		University of Duisburg-Essen, Germany
Keqin Ren, PhD		University of Puerto Rico, San Juan, USA
Reuven Schore, MD	PGY-6	SUNY Health Sciences, Brooklyn, New York
Xun Shang		National University of Singapore, Singapore
Thiyam Singh, PhD		Central Drug Research Institute, India
Emily Thomas, PhD		Vanderbilt University
Daren Wang, PhD		Akita University Medical School, University of China Medical School, China
Lei Wang, PhD		National University of Singapore, Singapore
Junping Wei, MD		Hebei Medical University School of Medicine, China Shinshu University Graduate School of Medicine, Japan
Elke Will, PhD		University of Goettingen, Germany
Jianqing Wu, MD		Suchow University, China
Zhenlan Xing, PhD		Shandong University, China
Xiaoling Zhang, MD		Shanghai Medical University, China
Yun Zhou, PhD		China Agricultural University, China
Guchuan Zhu, MD		Nanjing Medical College of TCM, China

GRANTS, CONTRACTS AND INDUSTRY AGREEMENTS

Grant and Contract Awards		Annual Direct/Project Period Direct
Andreassen, P		
Function and Regulation of the Fanconi Anemia Protein FANCD2 in Response to Stalled Replication		
American Cancer Society - Ohio		
	07/01/05 – 06/30/06	$27,273
Baum, C		
Prevention of Insertional Mutagenesis in Gene Therapy		
National Institutes of Health		
R01 CA 107492	08/01/05 – 05/31/09	$312,287/$620,861
Cancelas, J		
Mobilization of Hematopoietic Stem Cells and Progenitors by Reversible Inhibition of RAC-Type RHO GTPases: Demonstration of Proof-of-Principle for Future Clinical Applications		
National Blood Foundation		
	07/01/05 – 06/30/06	$50,000
Filippi, M		
The Role of CDC42 in Neutrophil Functions		
American Society of Hematology		
	07/01/05 – 06/30/07	$50,000/$100,000
Geiger, H		
Genetic Regulation of Hematopoietic Stem Cell Mobilization		
National Institutes of Health		
R01 HL 076604	04/01/04 – 03/31/08	$195,300/$790,600
Genomic Integrity and DNA-Repair Pathways in Aging Hematopoietic Stem Cells		
Ellison Medical Foundation		
	07/01/05 – 06/30/09	$46,296/$185,184

Gu, Y

RhoH GTPase in Blood Cell and Cancer Development
National Institutes of Health
K01 CA 107110 02/01/05 – 01/31/10 $141,500/$687,500

Meetei, R

Defining the Role of FANCM Phosophorylation in Cross Link
American Cancer Society – National (University of Cincinnati subcontract)
04/01/06 – 03/31/07 $20,000

Miller, S

Identifying Therapeutic Targets for MPNST
National Institutes of Health
K01 NS 049191 05/18/05 – 02/28/08 $124,932/$374,862

Mulloy, J

Runx-Fusion Target Genes in Normal and Leukemic Hematopoiesis
National Institutes of Health
R21 DK 071103 05/01/06 – 04/30/08 $100,000/$200,000

The Role of CBFb-MYH11 in Acute Myeloid Leukemia
National Institutes of Health
R01 CA 118319 04/15/06 – 02/28/11 $177,500/$887,500

Nakai, Y

Structure, Function and Regulation of Merlin
National Institutes of Health (University of Cincinnati subcontract)
R01 CA 078524 12/01/05 – 02/28/06 $11,903

Pan, D

In vivo BM Stem Cell Gene Transfer for MPS Type 1
National Institutes of Health
R21 AI 061703 04/01/05 – 03/31/07 $146,475/$271,475

Pang, Q

Role of Nucleophosmin in FA-Evolved Leukemia
National Institutes of Health
R01 CA 109641 07/09/04 – 06/30/09 $200,183/$1,010,549

Role of FA Protein Complexes in Hematopoiesis
National Institutes of Health
R01 HL 076712 07/01/05 – 06/30/09 $250,000/$982,375

Inhibition of P53 by NPM and Its Relevance to Leukemic Development
Leukemia Research Foundation
07/01/05 – 06/30/06 $75,000

Ratner, N

Driving Neurofibroma Formation in Mice
Department of Defense
DAMD17-02-1-0679 07/15/05 – 07/14/06 $157,841

Modeling Brain Defects on NF1
Department of Defense
W81XWH-06-1-0114 11/15/05 – 11/14/08 $234,482/$715,948

Therapeutic Targets for Neurofibromatosis: Identification by Cross-species Gene Expression Analysis
Department of Defense
W81XWH-04-1-0273 02/01/04 – 02/28/07 $1,031,385/$3,105,545

Mitogenic Activities in Neurofibromatosis
National Institutes of Health
R01 NS 028840 03/22/06 – 01/31/11 $277,910/$1,416,947

Von Kalle, C

Vector Genomic Insertion and Mutagenesis in Human Hematopoiesis
National Institutes of Health
R01 HL 076458 04/01/04 – 03/31/08 $244,125/$988,250

Williams, D

Role of RAC2 in Development and Function of Blood Cells – Project 4
National Institutes of Health (Indiana University-Purdue University Indianapolis subcontract)
P01 HL 069974 04/01/02 – 03/31/07 $170,421/$788,020

RAC Protein in Hematopoietic Cell Survival and Function
National Institutes of Health
R01 DK 062757 04/01/02 – 03/31/07 $284,276/$1,390,086

RhoH and GTPase in Hematopoiesis and Cancer
National Institutes of Health
R01 CA 113969 05/20/05 – 04/30/10 $158,459/$790,817

Targeting Rac GTPases in Bcr-abl-induced Chronic Myelogenous Leukemia
The Leukemia & Lymphoma Society
10/01/05 – 09/30/08 $180,018/$540,054

Dose Intensification by Gene Transduction in Cancer
National Institutes of Health (Indiana University-Purdue University Indianapolis subcontract)
P01 CA 075426 07/01/05 – 02/28/06 $234,194

Chemoresistance and Stem Cell Selection
National Institutes of Health
R01 DK 074310 01/01/06 – 12/31/10 $222,323/$1,180,344

Novel Molecular and Cellular Therapies in Fanconi Anemia
National Institutes of Health
R01 HL 081499 04/01/06 – 03/31/10 $259,067/$1,075,826

Zheng, Y

DBL-Like Regulators of Small GTP-Binding Proteins
National Institutes of Health
R01 GM 053943 04/01/05 – 03/31/09 $195,300/$785,900

Rho GTPase-Activating Proteins in Cancer
National Institutes of Health
R01 CA 105117 03/01/04 – 02/28/09 $160,146/$828,938

Interaction of Rho GTPases with Regulators and Effectors
National Institutes of Health
R01 GM 060523 07/01/04 – 06/30/08 $174,000/$721,000

Current Year Direct $5,912,596

Industry Contracts

Kelly, P

Novartis Pharmaceutical Corporation $4,182

Current Year Direct Receipts $4,182

TOTAL $5,916,778

PUBLICATIONS

1. Andreassen PR, Ho GP, D'Andrea AD. DNA damage responses and their many interactions with the replication fork. Carcinogenesis 2006;27(5):883-92.
2. Cantor SB, Andreassen PR. Assessing the link between BACH1 and BRCA1 in the FA pathway. Cell Cycle 2006;5(2):164-7.

3. Litman R, Peng M, Jin Z, Zhang F, Zhang J, Powell S, Andreassen PR, Cantor SB. BACH1 is critical for homologous recombination and appears to be the Fanconi anemia gene product FANCJ. Cancer Cell 2005;8(3):255-65.

4. Baum C, Kustikova O, Modlich U, Li Z, Fehse B. Mutagenesis and oncogenesis by chromosomal insertion of gene transfer vectors. Hum Gene Ther 2006;17(3):253-63.

5. Baum C, Schambach A, Bohne J, Galla M. Retrovirus vectors: toward the plentivirus? Mol Ther 2006;13(6):1050-63.

6. Beutel G, Meyer J, Ma L, Yin S, Eder M, von Neuhoff N, Wilkens L, Wei J, Hertenstein B, Heil G, Schlegelberger B, Ganser A, Li Z, Baum C. Expression of the p75 neurotrophin receptor in acute leukaemia. Br J Haematol 2005;131(1):67-70.

7. Pilat S, Carotta S, Schiedlmeier B, Kamino K, Mairhofer A, Will E, Modlich U, Steinlein P, Ostertag W, Baum C, Beug H, Klump H. HOXB4 enforces equivalent fates of ES-cell-derived and adult hematopoietic cells. Proc Natl Acad Sci U S A 2005;102(34):12101-6.

8. Schambach A, Bohne J, Baum C, Hermann FG, Egerer L, von Laer D, Giroglou T. Woodchuck hepatitis virus post-transcriptional regulatory element deleted from X protein and promoter sequences enhances retroviral vector titer and expression. Gene Ther 2006;13(7):641-5.

9. Akbar H, Cancelas J, Williams DA, Zheng J, Zheng Y. Rational design and applications of a Rac GTPase-specific small molecule inhibitor. Methods Enzymol 2006;406:554-65.

10. Cancelas JA, Lee AW, Prabhakar R, Stringer KF, Zheng Y, Williams DA. Rac GTPases differentially integrate signals regulating hematopoietic stem cell localization. Nat Med 2005;11(8):886-91.

11. Cancelas JA, Williams DA. Stem cell mobilization by beta2-agonists. Nat Med 2006;12(3):278-9.

12. Chandra S, Levran O, Jurickova I, Maas C, Kapur R, Schindler D, Henry R, Milton K, Batish SD, Cancelas JA, Hanenberg H, Auerbach AD, Williams DA. A rapid method for retrovirus-mediated identification of complementation groups in Fanconi anemia patients. Mol Ther 2005;12(5):976-84.

13. Nassar N, Cancelas J, Zheng J, Williams DA, Zheng Y. Structure-function based design of small molecule inhibitors targeting rho family GTPases. Curr Top Med Chem 2006;6(11):1109-16.

14. Presley CA, Lee AW, Kastl B, Igbinosa I, Yamada Y, Fishman GI, Gutstein DE, Cancelas JA. Bone marrow connexin-43 expression is critical for hematopoietic regeneration after chemotherapy. Cell Commun Adhes 2005;12(5-6):307-17.

15. Cripe TP, Thomson B, Boat TF, Williams DA. Promoting translational research in academic health centers: navigating the "roadmap". Acad Med 2005;80(11):1012-8.

16. Toretsky JA, Erkizan V, Levenson A, Abaan OD, Parvin JD, Cripe TP, Rice AM, Lee SB, Uren A. Oncoprotein EWS-FLI1 activity is enhanced by RNA helicase A. Cancer Res 2006;66(11):5574-81.

17. Harkness UF, Crombleholme TM. Twin-twin transfusion syndrome: where do we go from here? Semin Perinatol 2005;29(5):296-304.

18. Keswani SG, Crombleholme TM, Rychik J, Tian Z, Mackenzie TC, Johnson MP, Wilson RD, Flake AW, Hedrick HL, Howell LJ, Adzick NS. Impact of continuous intraoperative monitoring on outcomes in open fetal surgery. Fetal Diagn Ther 2005;20(4):316-20.

19. Liechty KW, Hedrick HL, Hubbard AM, Johnson MP, Wilson RD, Ruchelli ED, Howell LJ, Crombleholme TM, Flake AW, Adzick NS. Severe pulmonary hypoplasia associated with giant cervical teratomas. J Pediatr Surg 2006;41(1):230-3.

20. Marwan A, Crombleholme TM. The EXIT procedure: principles, pitfalls, and progress. Semin Pediatr Surg 2006;15(2):107-15.

21. Pawel BR, Crombleholme TM. Mesenchymal hamartoma of the chest wall. Pediatr Surg Int 2006;22(4):398-400.

22. Altmaier EM, Ewell M, McQuellon R, Geller N, Carter SL, Henslee-Downey J, Davies S, Papadopoulos E, Yanovich S, Gingrich R. The effect of unrelated donor marrow transplantation on health-related quality of life: a report of the unrelated donor marrow transplantation trial (T-cell depletion trial). Biol Blood Marrow Transplant 2006;12(6):648-55.

23. Chen Z, Robison L, Giller R, Krailo M, Davis M, Davies S, Shu XO. Environmental exposure to residential pesticides, chemicals, dusts, fumes, and metals, and risk of childhood germ cell tumors. Int J Hyg Environ Health 2006;209(1):31-40.

24. Chen Z, Stewart PA, Davies S, Giller R, Krailo M, Davis M, Robison L, Shu XO. Parental occupational exposure to pesticides and childhood germ-cell tumors. Am J Epidemiol 2005;162(9):858-67.

25. Davies SM, Radloff GA, DeFor TE, Levran O, Batish SD, Hanenberg H, Auerbach AD. GST genotype may modify clinical phenotype in patients with Fanconi anaemia. Br J Haematol 2005;131(1):118-22.

26. Eapen M, Raetz E, Zhang MJ, Muehlenbein C, Devidas M, Abshire T, Billett A, Homans A, Camitta B, Carroll WL, Davies SM. Outcomes after HLA-matched sibling transplantation or chemotherapy in children with B-precursor acute lymphoblastic leukemia in a second remission: a collaborative study of the Children's Oncology Group and the Center for International Blood and Marrow Transplant Research. Blood 2006;107(12):4961-7.

27. Eapen M, Rubinstein P, Zhang MJ, Camitta BM, Stevens C, Cairo MS, Davies SM, Doyle JJ, Kurtzberg J, Pulsipher MA, Ortega JJ, Scaradavou A, Horowitz MM, Wagner JE. Comparable long-term survival after unrelated and HLA-matched sibling donor hematopoietic stem cell transplantations for acute leukemia in children younger than 18 months. J Clin Oncol 2006;24(1):145-51.

28. Hahn T, Wall D, Camitta B, Davies S, Dillon H, Gaynon P, Larson RA, Parsons S, Seidenfeld J, Weisdorf D, McCarthy PL, Jr. The role of cytotoxic therapy with hematopoietic stem cell transplantation in the therapy of acute lymphoblastic leukemia in adults: an evidence-based review. Biol Blood Marrow Transplant 2006;12(1):1-30.

29. Iannone R, Davies SM. Tissue typing for hematopoietic cell transplantation: newer techniques and newer antigens for which cross-matching is helpful. Pediatr Transplant 2005;9 Suppl 7:76-80.

30. Mehta P, Vinks A, Filipovich A, Vaughn G, Fearing D, Sper C, Davies S. High-dose weekly AmBisome antifungal prophylaxis in pediatric patients undergoing hematopoietic stem cell transplantation: a pharmacokinetic study. Biol Blood Marrow Transplant 2006;12(2):235-40.

31. Mehta PA, Alonzo TA, Gerbing RB, Elliott JS, Wilke TA, Kennedy RJ, Ross JA, Perentesis JP, Lange BJ, Davies SM. XPD Lys751Gln polymorphism in the etiology and outcome of childhood acute myeloid leukemia: a Children's Oncology Group report. Blood 2006;107(1):39-45.

32. Rizzo JD, Wingard JR, Tichelli A, Lee SJ, Van Lint MT, Burns LJ, Davies SM, Ferrara JL, Socie G. Recommended screening and preventive practices for long-term survivors after hematopoietic cell transplantation: joint recommendations of the European Group for Blood and Marrow Transplantation, the Center for International Blood and Marrow Transplant Research, and the American Society of Blood and Marrow Transplantation. Biol Blood Marrow Transplant 2006;12(2):138-51.

33. Rizzo JD, Wingard JR, Tichelli A, Lee SJ, Van Lint MT, Burns LJ, Davies SM, Ferrara JL, Socie G. Recommended screening and preventive practices for long-term survivors after hematopoietic cell transplantation: joint recommendations of the European Group for Blood and Marrow Transplantation, Center for International Blood and Marrow Transplant Research, and the American Society for Blood and Marrow Transplantation (EBMT/CIBMTR/ASBMT). Bone Marrow Transplant 2006;37(3):249-61.

34. Shankar S, Davies S, Giller R, Krailo M, Davis M, Gardner K, Cai H, Robison L, Shu XO. In utero exposure to female hormones and germ cell tumors in children. Cancer 2006;106(5):1169-77.

35. DiMartino JF, Lacayo NJ, Varadi M, Li L, Saraiya C, Ravindranath Y, Yu R, Sikic BI, Raimondi SC, Dahl GV. Low or absent SPARC expression in acute myeloid leukemia with MLL rearrangements is associated with sensitivity to growth inhibition by exogenous SPARC protein. Leukemia 2006;20(3):426-32.

36. Wang L, Yang L, Filippi MD, Williams DA, Zheng Y. Genetic deletion of Cdc42GAP reveals a role of Cdc42 in erythropoiesis and hematopoietic stem/progenitor cell survival, adhesion, and engraftment. Blood 2006;107(1):98-105.

37. Geiger H, Schleimer D, Nattamai KJ, Dannenmann SR, Davies SM, Weiss BD. Mutagenic potential of temozolomide in bone marrow cells in vivo. Blood 2006;107(7):3010-1.

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