

13th Diamond Blackfan Anemia International Consensus Conference

Sponsored by:



SATURDAY, MARCH 8th

6:30PM **2014 Kick-Off Dinner ~ The Plaza Ballroom (Second Floor)**
Welcome: **Dawn M. Baumgardner**

SUNDAY MARCH 9th

7:30 – 8:30 **Breakfast Buffet ~ Grand Ballroom – Salons III and IV (Lower Level)**

Meetings will be held in The Grand Ballroom Salons I and II (Lower Level)

8:30 – 8:50 Welcome Remarks and Introductions
Dawn M. Baumgardner
Executive Director, Diamond Blackfan Anemia Foundation, Inc.

8:50 – 9:10 Overview of DBA
Jeffrey Lipton

Emerging Therapies

Moderators: Jeffrey Lipton / Johan Flygare

9:20 – 9:30 Synergism between PPAR α and glucocorticoid receptor signaling promotes self-renewal of human erythroid progenitors
Hsiang-Ying Lee, Xiaofei Gao, Inma Barrasa, Harvey F. Lodish

9:30 – 9:40 High-throughput screening identifies many novel potential therapies for Diamond-Blackfan Anemia
Lingbo Zhang, Lina Prak, Sherry Lee, Xiaofei Guo, Shilpa Hattangadi, and Harvey Lodish

9:50 – 10:00 Calmodulin inhibition rescues the effects of ribosomal protein deficiency in Diamond Blackfan anemia models
Elizabeth R. Macari, Alison M. Taylor¹, David M. Raiser, Kavitha Siva, Jessica M. Humphries, Katherine McGrath, Johan Flygare, Benjamin L. Ebert and Leonard I. Zon

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10:05 – 10:15 **The Australian Diamond-Blackfan Anaemia Program: a multi-centered approach to discover treatments for Diamond-Blackfan anaemia and other rare bone marrow failure syndromes**
Amee J. George, Sarah C.E. Bray, Richard J. D’Andrea, Brian Gabrielli, Thomas J. Gonda, S. Peter Klinken, Richard B. Pearson, Ben Saxon, Hamish S. Scott, Kaylene J. Simpson, Dubravka Škalamera, Adam W. Stephenson, Luen B. To, Amilia Wee, Louise N. Winteringham and **Ross D. Hannan**

10:20 - 10:30 *Coffee Break*

Model Systems of DBA

Moderators: Mitch Weiss / Stefan Karlsson

10:30 – 10:40 **iPS cell lines from Diamond Blackfan Anemia (DBA) patients with RPS19 or RPL5 mutation show differences in ribosome biogenesis and TGF beta signaling**
Jingping Ge, Marisa Apicella, Shwetha H. Manjunath, Jason A. Mills, Loïc Garçon, Deborah L. French, Mitchell J. Weiss, Monica Bessler, and Philip J. Mason

10:45 – 10:55 **Gene therapy corrects the anemia and lethal bone marrow failure in mouse model for RPS19-deficient Diamond-Blackfan anemia**
Shubhranshu Debnath, Pekka Jaako, Karin Olsson, Ute Modlich, Michael Rothe, Kavitha Siva, Axel Schambach, H. Bobby Gaspar, Johan Flygare and Stefan Karlsson

11:00 – 11:10 **RAP-011 efficiently rescues erythropoiesis in zebrafish models of Diamond Blackfan Anemia**
Jason Ear, Haigen Huang, Zahra Tehrani, Victoria Sung, Thomas O. Daniel, Rajesh Chopra, and **Shuo Lin**

Pathogenic Mechanisms

Moderators: Robert Arceci / Pierre-Emmanuel Gleizes

11:15 – 11:25 **Relevance of RPL11-mediated inhibition of Mdm2 in the stabilization of p53 in an RPS6 mouse model of DBA and 5q- syndrome**
Carol Mercer, Teng Teng, Stefano Fumagalli, Fukun Guo, Sara C. Kozma, Yi Zheng, George Thomas

11:30 – 11:40 **Insights into the pathogenesis of Diamond-Blackfan anemia**
Janis Abkowitz, Keel SB, Gerds A, Scott B, Shimamura A, and Yang Z

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- 11:45 – 11:55 The RP-Mdm2 interaction underlies the p53-mediated component of the erythroid defect in a mouse model for Diamond-Blackfan anemia
Pekka Jaako, Shubhranshu Debnath, Karin Olsson, Mikael S. Lindström and Stefan Karlsson
- 12:00– 12:10 The 5S RNP Couples p53 Homeostasis to Ribosome Biogenesis and Nucleolar Stress
Katherine Elizabeth Sloan, Loren Macdonald, Zhao Zhao and **Nicholas James Watkins**
- 12:15 – 1:15 ***Lunch - Grand Ballroom – Salons III and IV (Lower Level)***

Pathogenic Mechanisms and the Ribosome

Moderators: Arnold Levine / Marieke von Lindern

- 1:15 – 1:25 Analysis the p53 pathway in RPL5/RPL11 deficient erythroid progenitors
Teng Teng, Kelly O'Brien, Jiang Wang, Punam Malik, Adrianna Vlachos, Jeffery M. Lipton, Sara C. Kozma, Carol A. Mercer, David M. Bodine, George Thomas
- 1:30 – 1:40 Molecular mechanisms of ITS1 processing in human cells, a pre-ribosomal RNA maturation step often affected in DBA
Marie-Françoise O'Donohue, Milena Preti, Nathalie Montel-Lehry, Marie-Line Cavallé-Bortolin, **Pierre-Emmanuel Gleizes**
- 1:45 – 1:55 A ubiquitin-conjugating enzyme critical for terminal erythroid differentiation: possible implications for Diamond-Blackfan anemia
Anthony Nguyen, Miguel A. Prado, Yuan Shi, Verena Dederer, Paul Schmidt, Dean Campagna, Steven P. Gygi, Mark D. Fleming, and Daniel Finley

GATA1 and DBA

Moderators: David Nathan / Irma Dianzani

- 2:00 – 2:10 Stage selective requirement for the N-terminus of GATA1 during erythropoiesis
Monika Stankiewicz, Timothy Chlon and **John D. Crispino**
- 2:15 – 2:25 Roles for the GATA1 amino terminus in erythroid differentiation revealed through patient-derived pluripotent stem cells
Daniel VanDorn, Marta Byrska-Bishop, Amy Campbell, Philip R. Arca, Yu Yao, Paul Gadue, Fernando Costas, Gerd A. Blobel, Richard L. Nemiroff, Deborah L. French, Ross C. Hardison, **Mitchell J. Weiss**, Stella T. Chou
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- 2:30 – 2:40 **The Role of GATA1 in Diamond-Blackfan Anemia**
Leif S. Ludwig, Hanna T. Gazda, Jennifer C. Eng, Stephen W. Eichhorn, Prathapan Thirul, Roxanne Ghazvinian, Tracy I. George, Jason R. Gotlib, Alan H. Beggs, Colin A. Sieff, Harvey F. Lodish, Eric S. Lander and **Vijay G. Sankaran**
- 2:45 – 2:55 **Update from the NIDDK/NIH**
Dr. Terry Bishop
Hematology Program Director
National Institute of Diabetes and Digestive and Kidney Diseases, NIH
- 2:55 – 3:05 **Update from the NHLBI**
Dr. Pankaj Qasba, Program Director
Blood Diseases Branch
Division of Blood Diseases and Resources
National Heart, Lung, and Blood Institute, NIH
- 3:05 – 3:15 *Coffee Break*
- 3:15 – 3:45 **Poster Viewing**

Poster Session 1

3:45 – 5:15 *Facilitator: David Bodine / Anu Narla*

Patient-derived induced pluripotent stem cells recapitulate the pathophysiology and variable penetrance of DBA

Marisol Betensky Betensky M, Ge J, Garcon L, Manjunath SH, Mills JA, Apicella M, Parikh S, Sullivan LM, Podsakoff GM, Gadue P, French DL, Mason PJ, Bessler M and Weiss MJ

Gene correction and induced pluripotent stem cell production using DBA fibroblasts

Erik Westin, Chao Li, Tim Townes, **Frederick Goldman**

Ginger can stimulate blood cell formation in zebrafish embryos

Karine F. Ferri-Lagneau, Shengmin Sang, **TinChung Leung**

L-Leucine improves the anemia of DBA via activation of the mTOR pathway in a p53-independent manner

Nirmalee Abayasekara, Anupama Narla, Slater Hurst, Hong Sun, Elspeth Payne, Benjamin Ebert, A. Thomas Look, Barry H. Paw, Nancy Berliner, **Arati Khanna-Gupta**

The downstream effects of RP gene mutations

Alyson MacInnes

Analyzing the zebrafish model of Diamond Blackfan anemia

Tamayo Uechi, Yukari Nakajima, Gnaneshwar V. Yadav, Yutaka Suzuki, Sumio Sugano, and Naoya Kenmochi

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Defective ribosomal RNA processing in Diamond-Blackfan anemia patients: Potential molecular biomarkers for diagnosis?

Anirban Chakraborty, Marie-Françoise O'Donohue, Hanna T. Gazda, and Pierre-Emmanuel Gleizes

A systematic loss-of-function analysis of zebrafish bystin-like (bysl) mutant: Could pre-ribosomal factors be potential DBA-associated genes?

Anirban Chakraborty, Pascale Dufourcq, Patrick Blader, and Pierre-Emmanuel Gleizes

BMI1 regulates ribosome biogenesis in erythroid progenitor cells

Rui Gao, Sisi Chen, Michihiro Kobayashi, Hao Yu, Sara K. Young, Anthony Soltis, Yingchi Zhang, Yang Wan, Sasidhar Vemula, Ernest Fraenkel, Alan Cantor, Yang Xu, Mervin C. Yoder, Reuben Kapur, Ronald C. Wek, Steven R. Ellis, Xiaofan Zhu, **Yan Liu**

Erythroid and Osteogenic Differentiation Defects in Rps19- and Rpl5-Mutant Embryonic Stem Cells: Evidence Against a Specific Role of p53

Sharon A. Singh, Brian M. Dulmovits, Tracie Goldberg, Jeffrey M. Lipton, Lionel Blanc, Johnson M. Liu

Ribosomal Stress Activates a Complex Response Involving p53, AMPK and PIM1 Kinase

Vinay Sagar, Sara Caldarola, Angelo Gismondi, Giada Juli, Lidia Chellini, Valentina Iadevaia, Christopher G. Proud, **Fabrizio Lorenzi**

Conditional targeting of murine Rpl11 during embryogenesis results in fetal loss.

Meagan McGuinness, Minh Nguyen, Yuko Fujiwara and **Colin Sieff**

Increased Tumorigenesis in Ribosomal Proteins L5 and S24 Heterozygous Mice

Shideh Kazerounian, Pedro Ciarlini, Roxanne Ghazvinian, Meritxell Alberich-Jorda, Daniel Yuan, Mugdha Joshi, Hong Zhang, Alan H. Beggs and **Hanna T. Gazda**

Transcriptional divergence and conservation of human and mouse erythropoiesis

Novalia Pishesha, Prathapan Thiru, Jiahai Shi, Jennifer C. Eng, Vijay G. Sankaran and Harvey F. Lodish

A Mouse Model Depicting the Role of Gata1 N-Terminal in Fetal Erythropoiesis – Relevance to Diamond Blackfan Anemia

Yehudit Birger, Liat Goldberg, Timothy M. Chlon, Inna Muler, Ginette Schiby, Jasmin Jacob-Hirsch, Gideon Rechavi, John D. Crispino and **Shai Izraeli**

Dosage-dependent GATA1 activity in human hematopoiesis and Diamond-Blackfan anemia

Leif S. Ludwig, Jacob Ulirsch, Aoi Wakabayashi, Harvey Lodish, Hanna T. Gazda, and Vijay G. Sankaran

Selective mRNA translation in erythropoiesis

Klaske Thiadens, Eleonora de Klerk, Emile van den Akker, Kat Moore, Peter-Bram 't Hoen, **Marieke von Lindern**

Dysferlin and other non-red cell proteins accumulate in the red cell membrane of Diamond-Blackfan Anemia patients

Esther N. Pesciotta, Sira Sriswasdi, Hsin-Yao Tang, David W. Speicher, **Philip J. Mason**, Monica Bessler

6:00 – 9:00

Cocktail Reception ~ The Plaza Ballroom (Second Floor)

MONDAY MARCH 10th

7:30 - 8:30 ***Breakfast Buffet ~ Grand Ballroom – Salons III and IV (Lower Level)***

Gene Discovery

Moderators: Monica Bessler / Akiko Shimamura

- 8:30 – 8:40 Autosomal recessive Diamond-Blackfan anemia: Identification of mutations in MCM2 and FLNB
Kelly A. O’Brien, Nancy E. Seidel, Jason E. Farrar, Adrianna Vlachos, NIH Intramural Sequencing Center, Stacie M. Anderson, Xiuli An, Eva Atsidaftos, Harry L. Malech, Robert Arceci, Steven R. Ellis, Jeffrey M. Lipton, David M. Bodine
- 8:45 – 8:55 Novel genes modulating erythroid proliferation in a mouse model for Diamond-Blackfan Anemia
Sara E Sjögren, Pekka Jaako, John G Doench, Stefan Karlsson, David E Root and **Johan Flygare**

Clinical Aspects of DBA

Moderators: Monica Bessler / Akiko Shimamura

- 9:00 – 9:10 Patients with Diamond Blackfan Anaemia have Abnormalities of Cellular and Humoral Immunity
Deena Iskander, Yvonne Harrington, Gareth Gerrard, Alex en Foong, Letizia Foroni, Irene Roberts, Anastasios Karadimitris and Josu de la Fuente
- 9:15 – 9:25 Loss of GATA-1 Full Length (GATA-1 FL) as a cause of Diamond-Blackfan anemia (DBA) phenotype
Sara Parrella, Anna Aspesi, Paola Quarello, Emanuela Garelli, Elisa Pavese, Adriana Carando, Margherita Nardi, Steven Ellis, Ugo Ramenghi, **Irma Dianzani**
- 9:30 – 9:40 Regulation of Iron Metabolism in Diamond-Blackfan Anemia
Dagmar Pospisilova, D. Holub, Z. Zidova, B.Ludikova, L. Sulovska, V. Divoky, M. Horvathova
- 9:45 – 9:55 What is “MDS” in Diamond-Blackfan Anemia and Other Inherited Bone Marrow Failure Syndromes
Blanche Alter, Tarek M Elghetany, Neelam Giri, Sharon Savage, Diane Arthur, Irina Maric
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- 10:00 – 10:10 **Elevated Erythrocyte Adenosine Deaminase (eADA) Activity as a Marker for Diamond Blackfan Anemia in Patients with Congenital Heart Disease**
Adrianna Vlachos, Diana S. Osorio, Evangelia Atsidaftos, Ellen Muir, Howard Seiden, Dorota Gruber, Jason E. Farrar, Lionel Blanc, Robert Arceci, Steven Ellis, Bertil Glader, David M. Bodine, Jeffrey M. Lipton
- 10:15 – 10:35 *Coffee Break* (Hotel Check-out and Luggage storage)
- 10:35 – 11:00 **Poster Viewing**

Poster Session 2

11:00 – 12:00 *Facilitators: Bert Glader / Lionel Blanc*

The application of high-throughput targeted genomics for the molecular characterisation of Diamond-Blackfan anaemia: a cohort study

Gareth Gerrard, Hui-En Foong, Deena Iskander, Mikel Valganon, Dalia Kasperaviciute, Michael Muller, Yvonne Harrington, Irene Roberts, Anastasios Karadimitris, Letizia Foroni, **Josu de la Fuente**

A Novel Deletion Involving RPL31 in a Child with Diamond Blackfan Anemia

Jason E. Farrar, Ross Fisher, Adrianna Vlachos, Eva Atsidaftos, Ellen Muir, Robert Arceci, Jeffrey M. Lipton, David M. Bodine, Steven Ellis

Genetics of Diamond-Blackfan anemia in the National Cancer Institute IBMFS Cohort: new and old ribosomal genes

Lisa Mirabello, Neelam Giri, Meredith Yeager, Joseph F. Boland, Ji He, Belynda D. Hicks, Laurie Burdett, Sharon A. Savage, Blanche P. Alter

Audiologic and Otologic Manifestations in Diamond-Blackfan Anemia

Neelam Giri, Adedoyin O. Kalejaiye, Charleen Adams, Carmen C. Brewer, Christopher K. Zalewski, Kelly King, H. Jeffrey Kim, Blanche P. Alter

Multiplexed genetic evaluation of inherited bone marrow failure and myelodysplastic syndromes

Michael Y. Zhang, Siobán B. Keel, Tom Walsh, Ming K. Lee, Colin C. Pritchard, Amanda C. Watts, Michael R. Jeng, Inga Hofmann, David A. Williams, Mark D. Fleming, Janis L. Abkowitz, Mary-Claire King, and **Akiko Shimamura**

Burden of Pearson marrow pancreas syndrome in a cohort of Diamond Blackfan anemia patients

Katelyn E. Gagne, Roxanne Ghazvinian, Daniel Yuan, Rebecca L. Zon, Kelsie Storm, Magdalena Mazur-Popinska, Laura Andolina, Halina Bubala, Sydonia Golebiowska, Meghan A. Higman, Krzysztof Kalwak, Peter Kurre, Michal Matysiak, Edyta Niewiadomska, Salley Pels, Mary Jane Petruzzi, Aneta Pobudejska-Pieniazek, Tomasz Szczepanski, Mark D. Fleming, Hanna T. Gazda and **Suneet Agarwal**

Chelation therapy in Diamond-Blackfan anemia patients: a French survey.

Thierry LeBlanc, Isabelle Marie, Lydie Da Costa

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Hematopoietic Stem Cell Transplantation as a Feasible Curative Option in Diamond Blackfan Anemia?
- An analysis from the German and Italian registries

Ina Hainmann, MD, Marcin Wlodarski, MD, Brigitte Strahm, MD, Friedrich Kapp, MD, Ugo Ramenghi, MD, Joerg Meerpohl, MD, Franco Locatelli, MD, Charlotte Niemeyer, MD. On behalf of the German and Italian DBA Registries.

Haematopoietic stem cell transplantation for Diamond Blackfan anaemia: a report from the Italian Association of Paediatric Haematology and Oncology Registry

Franca Fagioli, **Paola Quarello**, Marco Zecca, Edoardo Lanino, Paola Corti, Claudio Favre, Mimmo Ripaldi, Ugo Ramenghi, Franco Locatelli, Arcangelo Prete

Diamond Blackfan anemia diagnosis in Italian patients: data from the Italian registry

Ugo Ramenghi, Quarello P, Garelli E, Carando A, Botto C, Brusco A, Dianzani I

Genotyping Strategies for Diamond Blackfan Anemia Patients in Canada

Bozana Zlateska B, Hongbing Li, Ibrahim Ghemlas, Robert Klaassen, Conrad V Fernandez, Rochelle Yanofsky, John Wu, Yves Pastore, Mariana Silva, Jeff H Lipton, Jossee Brossard, Bruno Michon, Sharon Abish, McGregor Steele, Roona Sinha, Mark Belletrutti, Vicky Breakey, Lawrence Jardine, Lisa Goodyear, Amanda Wagner, Michaela Cada, **Yigal Dror**

Phenotypic and genotypic characteristics of Diamond Blackfan Anemia patients in Israel

Tracie Goldberg, Joanne Yacobovich, Orly Dgany, Tanya Krasnov, Shoshana Ravel-Vilk, Chaim Kaplinsky, Ayelet Ben Barak, Ronit Elhasid, Joseph Kapelusnik, Ami Ballin⁸, Hagit Miskin, Amir Kuperman, **Hannah Tamary**

12:00 – 12:15 Closing Remarks
 Steve Ellis

12:15 – 12:30 Farewell
 Diamond Blackfan Anemia Foundation

12:30 ***Lunch & Departure***
