

SMIM1 underlies the Vel blood group and influences red blood cell traits

Supplementary Information

Ana Cvejic^{*1,2,+}, Lonneke Haer-Wigman^{*3,4}, Jonathan C Stephens^{*1,5,6}, Myrto Kostadima⁷, Peter A Smethurst^{1,5,6}, Mattia Frontini^{1,5,6}, Emile van den Akker^{4,9}, Paul Bertone⁷, Ewa Bielczyk-Maczyńska^{1,2,5,6}, Samantha Farrow^{1,5,6}, Rudolf SN Fehrmann¹⁰, Alan Gray¹¹, Masja de Haas^{3,4}, Vincent G Haver¹², Gregory Jordan⁸, Juha Karjalainen¹⁰, Hindrik HD Kerstens¹³, Graham Kiddle^{1,5,6}, Heather Lloyd-Jones^{1,5,6}, Malcolm Needs¹¹, Joyce Poole¹⁴, Aicha Ait Soussan^{3,4}, Augusto Rendon^{1,5,6,15}, Klaus Rieneck¹⁶, Jennifer G Sambrook^{1,5,6}, Hein Schepers^{17,18}, Herman H W Silljé¹², Botond Sipos⁷, Dorine Swinkels¹⁹, Asif U Tamuri⁷, Niek Verweij¹², Nicholas A Watkins⁶, Harm-Jan Westra¹⁰, Derek Stemple², Lude Franke¹⁰, Nicole Soranzo², Hendrik G Stunnenberg¹³, Nick Goldman⁷, Pim van der Harst^{*10,12}, C Ellen van der Schoot^{*3,4}, Willem H Ouweland^{*1,2,5,6,+}, Cornelis A Albers^{*1,2,5,6,20,+}

* equal contribution

+ corresponding authors

Correspondence should be addressed to CAA (Email: c.albers@gen.umcn.nl), WHO (Email: who1000@cam.ac.uk) or AC (Email: as889@cam.ac.uk)

Affiliations:

1. Department of Haematology, University of Cambridge, CB2 0PT, United Kingdom
2. Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge, CB10 1HH, United Kingdom
3. Department of Experimental Immunohaematology, Sanquin Research, 1066 CX, Amsterdam, The Netherlands
4. Landsteiner Laboratory, Academic Medical Centre, University of Amsterdam, 1066 CX, The Netherlands
5. NIHR Cambridge Biomedical Research Centre, Cambridge, CB2 0QQ, United Kingdom
6. NHS Blood and Transplant, Cambridge, CB2 0PT, United Kingdom
7. EMBL-European Bioinformatics Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge, CB10 1SD, United Kingdom
8. 34 Houghton St, Somerville, MA 02143, USA
9. Department of Hematopoiesis, Sanquin Research, Amsterdam, 1066 CX, The Netherlands
10. University of Groningen, University Medical Center Groningen, Department of Genetics, Groningen, 9700 RB, The Netherlands
11. NHS Blood and Transplant, Tooting, London, SW17 0RB, United Kingdom
12. University of Groningen, University Medical Center Groningen, Department of Cardiology, Groningen, 9700 RB, The Netherlands
13. Department of Molecular Biology, Faculty of Science, Nijmegen Centre for Molecular Life Sciences, Radboud University, Nijmegen, 6525 GA, The Netherlands
14. International Blood Group Reference Laboratory, NHS Blood and Transplant, North Bristol Park, Northway, Filton, Bristol, BS34 7QH, United Kingdom
15. MRC Biostatistics Unit, Institute of Public Health, Cambridge, CB2 0SR, United Kingdom
16. Department of Clinical Immunology, Rigshospitalet, Copenhagen University Hospital, Blegdamsvej 9, Copenhagen, DK-2100, Denmark
17. University of Groningen, University Medical Center Groningen, Department of Experimental Hematology, Groningen, 9700 RB, The Netherlands
18. University of Groningen, University Medical Center Groningen, Department of Stem Cell Biology, Groningen, 9700 RB, The Netherlands
19. Department of Laboratory Medicine, Laboratory of Genetic, Endocrine and Metabolic diseases, Radboud University Medical Centre, Nijmegen, 6500 HB, The Netherlands
20. Department of Human Genetics, Radboud University Medical Centre, Nijmegen, 6500 HB, The Netherlands