

Publications and Patents

Publications

Publications, especially original papers that appear in scholarly journals, are a vital measure of the depth and quality of medical research conducted at the Institute. Typically, the papers produced by researchers are rigorously assessed by scientific peers to assure the papers' validity. WEHI researchers publish papers frequently in the most prestigious journals and their papers are highly-cited by researchers from other institutions.

2000/2001 WEHI Publications

Total number of publications: 159

Primary/Original research articles in refereed journals: 119

Review articles in refereed journals: 34

Chapters in books: 6

Publications jointly authored between Divisions and Groups: 24

Cancer and Haematology Division

Primary

1. Baca M, Kent SBH. Protein backbone engineering through total chemical synthesis: New insight into the mechanism of HIV-1 protease catalysis. *Tetrahedron* 56:9503-9513, 2000
2. Brysha M, Zhang JG, Bertolino P, Corbin JE, Alexander WS, Nicola NA, Hilton DJ, Starr R. Suppressor of cytokine signalling-1 attenuates the duration of interferon γ signal transduction in vitro and in vivo. *J Biol Chem* 276:22086-22089, 2001
3. Bullen DVR, Darwiche R, Metcalf D, Handman E, Alexander WS. Neutralisation of interferon γ in neonatal SOCS1^{-/-} mice prevents fatty degeneration of the liver but not subsequent fatal inflammatory disease. *Immunology* (in press)
4. Burnham K, Robb L, Scott CL, O'Keeffe M, Shortman K. Effect of granulocyte-macrophage colony-stimulating factor on the generation of epidermal Langerhans cells. *J Interferon Cytokine Res* 20:1071-1076, 2000
5. Coonan JR, Greferath U, Messenger J, Hartley L, Murphy M, Boyd AW, Dottori M, Galea MP, Bartlett PF. Development and reorganization of corticospinal projections in EphA4 deficient mice. *J Comp Neurol* 436:248-262, 2001
6. Curtis DJ, Jane SM, Hilton DJ, Dougherty L, Bodine DM, Begley CG. Adaptor protein SKAP55R is associated with myeloid differentiation and growth arrest. *Exp Hematol* 11:1250-1259, 2000
7. Daro E, Pulendran B, Brasel K, Teepe M, Pettit D, Lynch DH, Vremec D, Robb L, Shortman K, McKenna HJ, Maliszewski CR, Maraskovsky E. Polyethylene glycol-modified GM-CSF expands CD11b^{high}CD11c^{high} but not CD11b^{low}CD11c^{high} murine dendritic cells in vivo: a comparative analysis with Flt3 ligand. *J Immunol* 165:49-58, 2000
8. Ernst M, Inglese M, Waring P, Campbell IK, Bao S, Clay FJ, Alexander WS, Wicks IP, Tarlinton DM, Novak U, Heath JK, Dunn AR. Defective pg130-mediated signal transducer and activator of transcription (STAT) signaling results in degenerative joint disease, gastrointestinal ulceration and failure of uterine implantation. *J Exp Med* 194:189-204, 2001
9. Flores-Morales A, Fernandez L, Rico-Bautista E, Umana A, Negrin C, Zhang J-G, Norstedt G. Endoplasmic reticulum stress prolongs gh-induced janus kinase signaling (JAK2) signal transducer and activator of transcription (STAT5) signaling pathway. *Mol Endocrinol* 15:1471-1483, 2001
10. Hikino H, Miyagi T, Hua Y, Hirohisa S, Gold DP, Li X, Fujino M, Tetsuya T, Amemiya H, Suzuki S, Robb L, Miyata M, Kimura H. GM-CSF-independent development of dendritic cells from bone marrow cells in the GM-CSF-receptor-deficient mouse. *Transplant Proc* 32:2458-2459, 2000
11. Kile BT, Metcalf D, Mifsud S, Di Rago L, Nicola NA, Hilton DJ, Alexander WS. Functional analysis of Asb-1 using genetic modification in mice. *Mol Cell Biol* 21:6189-6197, 2001
12. Kile BT, Viney EM, Willson TA, Brodnicki TC, Cancilla MR, Herlihy AS, Croker BA, Baca M, Nicola NA, Hilton DJ, Alexander WS. Cloning and characterization of the genes encoding the ankyrin repeat and SOCS box-containing proteins Asb-1, Asb-2, Asb-3 and Asb-4. *Gene* 258:31-41, 2000
13. Laabi Y, Metcalf D, Mifsud S, Di Rago L. Differentiation commitment and regulator-specific granulocyte-macrophage maturation in a novel pro-B murine leukemic cell line. *Leukemia* 14:1785-1795, 2000
14. Lazner F, Kola I, Stadler E, Elefanty AG. Embryonic stem cells in the study of hematopoiesis. *Methods Mol Biol* 158:287-300, 2001
15. Li R, Hartley L, Robb L. Cloning of rat interleukin-11 and interleukin 11 receptor alpha chain and analysis of their expression in rat uterus in the peri-implantation period. *Reproduction* (in press)
16. Lindeman GJ, Wittlin S, Lada H, Naylor MJ, Santamaria M, Zhan J-G, Starr R, Hilton DJ, Alexander WS, Ormandy CJ, Visvader J. SOCS1 deficiency results in accelerated mammary gland development and rescues lactation in prolactin receptor-deficient mice. *Genes Dev* 15:1631-1636, 2001
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18. Ritchie DS, Seymour JF, Roberts AW, Szer J, Grigg AP. Acute left ventricular failure following melphalan and fludarabine conditioning. *Bone Marrow Transplant* 28:101-103, 2001
19. Robb L, Dimitriadis E, Salamonsen LA. Leukemia inhibitory factor and interleukin 11: cytokines with key roles in implantation. *Reproduction* (in press)



20. Robb L, Hartley L, Begley CG, Brodnicki TC, Copeland NG, Gilbert DJ, Jenkins NA, Elefanty AG. Cloning, expression analysis and chromosomal localization of murine and human homologues of a *Xenopus Mix* gene. *Dev Dyn* 219:497-504, 2000
21. Roberts AW, Robb L, Rakar S, Hartley L, Cluse L, Nicola NA, Metcalf D, Hilton DJ, Alexander WS. Placental defects and embryonic lethality in mice lacking suppressor of cytokine signaling 3. *Proc Natl Acad Sci U S A* 98:9324-9329, 2001
22. Ryan PJ, Willson TA, Alexander WS, Di Rago L, Mifsud S, Metcalf D. The multi-organ origin of interleukin-5 in the mouse. *Leukemia* 15:1248-1255, 2001
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24. Scott CL, Robb L, Nandurkar HH, Mansfield R, Alexander WS, Begley CG. Thrombopoietin signaling is required for *in vivo* expansion of IL-11-responsive hematopoietic progenitor cells in the steady state. *Exp Hematol* 29:138-145, 2001
25. Silke J, Ekert PG, Day CL, Hawkins CJ, Baca M, Chew J, Pakusch M, Verhagen AM, Vaux DL. Direct inhibition of caspase 3 is dispensable for the anti-apoptotic activity of XIAP. *EMBO J* 20:3114-3123, 2001
26. Skelton NJ, Chen YM, Dubree N, Quan C, Jackson D, Cochran A, Zobel K, Deshayes K, Baca M, Pisabarro MT, Lowman HB. Structure-function analysis of a phage-display-derived peptide that binds to insulin-like growth factor binding protein 1. *Biochemistry* 40:8487-8498, 2001
27. Slavin M, Kannan K, Sasadeusz J, Roberts AW. Fungal infections are not a contraindication for allogeneic transplantation. *Leuk Lymphoma* (in press)
28. Sun X, Layton JE, Elefanty AG, Lieschke GJ. Comparison of effects of the tyrosine kinase inhibitors AG957, AG490 and STI571 on BCR-ABL-expressing cells, demonstrating synergy between AG490 and STI571. *Blood* 97:2008-2015, 2001
29. Yang FC, Atkinson SJ, Gu Y, Borneo JB, Roberts AW, Zheng Y, Pennington J, Williams DA. Rac and cdc42 GTPases control hematopoietic stem cell shape, adhesion, migration and mobilization. *Proc Natl Acad Sci U S A* 98:5614-5618, 2001
35. Metcalf D. Hematopoietic stem cells: old and new. *Biomed Pharmacother* 55:75-78, 2001
36. Metcalf D, Laabi Y. Lineage commitment and maturation induction in normal and leukemic preprogenitor cells. *Ann N Y Acad Sci* 938:278-291; discussion 291-272, 2001
37. Nicholson SE, Alexander WS. SOCS proteins in haemopoiesis. In: Ward AC, ed. *The JAK-STAT pathway in hematopoiesis*. Texas: Landes Bioscience (in press)
38. Salamonsen LA, Dimitriadis E, Robb L, Findlay JK. Cytokines in implantation. *Sem Reprod Endocrinol* (in press)

Molecular Genetics of Cancer Division

Primary

39. Bouillet P, Zhang LC, Huang DC, Webb GC, Bottema CD, Shore P, Eyre HJ, Sutherland GR, Adams JM. Gene structure alternative splicing, and chromosomal localization of pro-apoptotic Bcl-2 relative Bim. *Mamm Genome* 12:163-168, 2001
40. Ekert PG, Silke J, Hawkins CJ, Verhagen AM, Vaux DL. DIABLO promotes apoptosis by removing MIHA/XIAP from processed caspase 9. *J Cell Biol* 152:483-490, 2001
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32. Kile BT, Alexander WS. The suppressors of cytokine signaling. *Cell Mol Life Sci* (in press)
33. Kile BT, Nicola NA, Alexander WS. Negative regulators of cytokine signaling. *Int J Hematol* 73:292-298, 2001
34. Metcalf D. The nature of hematopoietic cell development as deducible from clonal cultures. In: Zion L, ed. *Hematopoiesis: A developmental approach*. Oxford: Oxford University Press (in press)

49. Putcha GV, Moulder KL, Golden JP, Bouillet P, Adams JA, Strasser A, Johnson EM. Induction of BIM, a proapoptotic BH3-only BCL-2 family member, is critical for neuronal apoptosis. *Neuron* 29:615-628, 2001
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51. Racke FK, Wang D, Zaidi Z, Kelley J, Visvader J, Soh JW, Goldfarb AN. A potential role for protein kinase C-epsilon in regulating megakaryocytic lineage commitment. *J Biol Chem* 276:522-528, 2001
52. Silke J, Ekert PG, Day CL, Hawkins CJ, Baca M, Chew J, Pakusch M, Verhagen AM, Vaux DL. Direct inhibition of caspase 3 is dispensable for the anti-apoptotic activity of XIAP. *EMBO J* 20:3114-3123, 2001
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59. Adams JM, Cory S. Life-or-death decisions by the Bcl-2 protein family. *Trends Biochem Sci* 26:61-66, 2001
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61. Gerondakis S, Strasser A. To live and let die. *Nat Immunol* 2:377-379, 2001
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63. Laabi Y, Strasser A. Immunology. Lymphocyte survival – ignorance is Blys. *Science* 289:883-884, 2000
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Immunology Division

Primary

68. Blackburn C, Grogan JL, Augustine CL, Miller JFAP, Varigos G, Morahan G. Effect of localized cytokine dysregulation: accelerated rejection of IL-2-expressing skin grafts. *Immunol Cell Biol* 79:128-131, 2001
69. Burnham K, Robb L, Scott CL, O'Keefe M, Shortman K. Effect of granulocyte-macrophage colony-stimulating factor on the generation of epidermal Langerhans cells. *J Interferon Cytokine Res* 20:1071-1076, 2000
70. Daro E, Pulendran B, Brasel K, Teepe M, Pettit D, Lynch DH, Vremec D, Robb L, Shortman K, McKenna HJ, Maliszewski CR, Maraskovsky E. Polyethylene glycol-modified GM-CSF expands CD11b^{high}CD11c^{high} but not CD11b^{low}CD11c^{high} murine dendritic cells in vivo: a comparative analysis with Flt3 ligand. *J Immunol* 165:49-58, 2000
71. Ernst M, Inglese M, Waring P, Campbell IK, Bao S, Clay FJ, Alexander WS, Wicks IP, Tarlinton DM, Novak U, Heath JK, Dunn AR. Defective pg130-mediated signal transducer and activator of transcription (STAT) signaling results in degenerative joint disease, gastrointestinal ulceration and failure of uterine implantation. *J Exp Med* 194:189-204, 2001
72. Grossmann M, O'Reilly LA, Gugasyan R, Strasser A, Adams JM, Gerondakis S. The anti-apoptotic activities of Rel and RelA required during B-cell maturation involve the regulation of Bcl-2 expression. *Embo J* 19:6351-6360, 2000
73. Hanninen A, Braakhuis A, Heath WR, Harrison LC. Mucosal antigen primes diabetogenic cytotoxic T-lymphocytes regardless of dose or delivery route. *Diabetes* 50:771-775, 2001
74. Henri S, Vremec D, Kamath AT, Waithman J, Williams S, Benoist C, Burnham K, Saeland S, Handman E, Shortman K. The dendritic cell populations of mouse lymph nodes. *J Immunol* 167:741-748, 2001
75. Hochrein H, O'Keefe M, Luft T, Vandenabeele S, Grumont RJ, Maraskovsky E, Shortman K. Interleukin (IL)-4 is a major regulatory cytokine governing bioactive IL-12 production by mouse and human dendritic cells. *J Exp Med* 192:823-834, 2000
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79. Li M, Davey GM, Sutherland RM, Kurts C, Lew AM, Hirst C, Carbone FR, Heath WR. Cell-associated ovalbumin is cross-presented much more efficiently than soluble ovalbumin in vivo. *J Immunol* 166:6099-6103, 2001
80. Mori S, Shortman K, Wu L. Characterisation of thymus-seeding precursor cells from mouse bone marrow. *Blood* 98:696-704, 2001
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86. Gerondakis S, Strasser A. To live and let die. *Nat Immunol* 2:377-379, 2001
87. Heath WR. Dendritic cells fired up on heat shock proteins. *Immunol Today* 21:309, 2000
88. Miller JFAP. Mechanisms of immune self tolerance. *Transplantation* (in press)
89. Miller JFAP. Ruby Anniversary: forty years of thymus immunology research. *Nat Immunol* 2:663-664, 2001
90. Shortman K, Wu L. Parentage and heritage of dendritic cells. *Blood* 97:3325A-3326, 2001

Infection and Immunity Division

Primary

91. Bullen DVR, Darwiche R, Metcalf D, Handman E, Alexander WS. Neutralisation of interferon γ in neonatal SOCS1^{-/-} mice prevents fatty degeneration of the liver but not subsequent fatal inflammatory disease. *Immunology* (in press)
92. Coley AM, Campanale NV, Casey JL, Hodder AN, Crewther PE, Anders RF, Tilley LM, Foley M. Rapid and precise epitope mapping of monoclonal antibodies against *Plasmodium falciparum* AMA1 by combined phage display of fragments and random peptides. *Protein Eng* 13: 283-289, 2001
93. Henri S, Vremec D, Kamath AT, Waithman J, Williams S, Benoist C, Burnham K, Saeland S, Handman E, Shortman K. The dendritic cell populations of mouse lymph nodes. *J Immunol* 167:741-748, 2001
94. Hinton TM, Crabb BS. The novel picornavirus *Equine rhinitis B virus* contains a strong type II internal ribosomal entry site which functions similarly to that of *Encephalomyocarditis virus*. *J Gen Virol* 82:2257-2269, 2001
95. Hodder AN, Crewther PE, Anders RF. Specificity of the protective antibody response to apical membrane antigen 1. *Infect Immun* 69:3286-3294, 2001
96. Jensen ATR, Curtis J, Montgomery J, Handman E, Theander TG. *Leishmania donovani*: Molecular and immunological characterisation of the glucose regulated protein. *Biochim Biophys Acta* (in press)
97. Jensen ATR, Kemp K, Theander TG, Handman E. Cloning expression and antigenicity analysis of the *Leishmania donovani* reductase. *APMIS* 109:461-468, 2001
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99. Noormohammadi AH, Hochrein H, Curtis JM, Baldwin TM, Handman E. Paradoxical effects of IL-12 in leishmaniasis in the presence and absence of vaccinating antigen. *Vaccine* 19:4043-4052, 2001
100. Noviyanti R, Brown GV, Wickham ME, Duffy ME, Cowman AF, Reeder JC. Multiple var gene transcripts are expressed in *Plasmodium falciparum* infected erythrocytes selected for adhesion. *Mol Biochem Parasitol* 114:227-237, 2001
101. O'Donnell R, Preiser PR, Williamson DH, Moore PW, Cowman AF, Crabb BS. An alteration in concatameric structure is associated with efficient segregation of plasmids in transfected *Plasmodium falciparum* parasites. *Nucleic Acids Res* 29:716-724, 2001
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105. Thompson JK, Triglia T, Reed MB, Cowman AF. A novel ligand from *Plasmodium falciparum* that binds to a sialic acid-containing receptor on the surface of human erythrocytes. *Mol Microbiol* 41:47-58, 2001
106. Triglia T, Healer J, Caruana SR, Hodder AN, Anders RF, Crabb BS, Cowman AF. Apical membrane antigen 1 plays a central role in erythrocyte invasion by *Plasmodium* species. *Mol Microbiol* 38:706-718, 2000

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108. Triglia T, Thompson JK, Cowman AF. An EBA175 homologue which is transcribed but not translated in erythrocytic stages of *Plasmodium falciparum*. *Mol Biochem Parasitol* 116:55-63, 2001
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116. Trenholme KR, Gardiner DL, Thomas EA, Holt DC, Kemp DJ, Cowman AF. Malaria: A new gene family (*clag*) involved in adhesion – reply. *Parasitol Today* 16:405, 2000

Autoimmunity and Transplantation Division

Primary

117. Adorini L, Gregori S, Harrison LC. New insights into the molecular understanding of type 1 diabetes. *Trends Mol Med* (in press)
118. Brady JL, Yamashita K, Lew AM. Enhanced survival of grafts genetically endowed with the ability to block CD2 and B7. *Cell Transplant* 10:175-181, 2001
119. Bullen DVR, Darwiche R, Metcalf D, Handman E, Alexander WS. Neutralisation of interferon γ in neonatal SOCS1^{-/-} mice prevents fatty degeneration of the liver but not subsequent fatal inflammatory disease. *Immunology* (in press)
120. Campbell IK, O'Donnell K, Lawlor KE, Wicks IP. Severe inflammatory arthritis and lymphadenopathy in the absence of TNF. *J Clin Invest* 107:1519-1527, 2001
121. Colman PG, McNair P, King J, Caudwell J, Jankulovski C, Tait BD, Honeyman MC, Harrison LC. Screening for preclinical type 1 diabetes in a discrete population with an apparent increased disease incidence. *Ped Diabetes* 1:193-198, 2000
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123. Ernst M, Inglese M, Waring P, Campbell IK, Bao S, Clay FJ, Alexander WS, Wicks IP, Tarlinton DM, Novak U, Heath JK, Dunn AR. Defective pg130-mediated signal transducer and activator of transcription (STAT) signaling results in degenerative joint disease, gastrointestinal ulceration and failure of uterine implantation. *J Exp Med* 194:189-204, 2001
124. Fosang AJ, Last K, Stanton H, Weeks DB, Campbell IK, Hardingham TE, Hembry RM. Generation and novel distribution of matrix metalloproteinase-derived aggrecan fragments in porcine cartilage explants. *J Biol Chem* 275:33027-33037, 2000
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129. Kamath AT, Pooley J, O'Keeffe MA, Vremec D, Zhan Y, Lew AM, D'Amico A, Wu L, Tough DF, Shortman K. The development, maturation, and turnover rate of mouse spleen dendritic cell populations. *J Immunol* 165:6762-6770, 2000
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Patents Granted

The granting of patents is a key form of international recognition of the innovative work being conducted at the Institute. Such patents also acknowledge and protect the prospective commercial value of the intellectual property of the Institute.

A Method for Regulating Neuron Development and Maintenance

Inventors: Perry Francis Bartlett, Mark Murphy

United States 6093390 (granted 2000), 6177402 (granted 2001)

A method for enhancing neuron survival and reagents useful for same

Inventor: Graham Leslie Barrett

United States 6174869 (granted 2001)

Improvements in granulocyte-macrophage colony-stimulating factor receptor and derivatives thereof

Inventors: Nicos Anthony Nicola, Donald Metcalf, Nicholas Martin Gough, David Paul Gearing, Julie Ann King

United States 6136957 (granted 2000)

A Novel Haemopoietin Receptor and Genetic Sequences Encoding Same

Inventors: Tracy Willson, Nicos Antony Nicola, Douglas James Hilton, Donald Metcalf, Jian Guo Zhang

Australia 718899 (granted 2000)

Cytokines and their use in treatment and/or prophylaxis of breast cancer

Inventors: Colin Glenn Begley, Andrea Margaret Douglas

Australia 723610 (granted 2000)

In addition, nine provisional patent applications proceeded to the international application stage during the year; provisional patent applications for three new inventions were also filed.