

# Publications

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## Recent Publications (\* indicates joint / co-corresponding author)

Induction of Human T-Cell and Cytokine Responses Following Immunization with a Novel Influenza Vaccine. Skibinski DAG, Jones LA, Zhu LW, Au B, Lee B, Naim ANM, Lee A, Kaliaperumal N, Low JGH, Lee LS, Poidinger M, Saudan P, Bachmann M, Ooi EE, Hanson BJ, Diermayr V, Matter A, Fairhurst A-M, Hibberd ML, Connolly JE. 2018. Dec 20;8(1):18007 *Scientific Reports*.

A flow cytometric-based assay for high-throughput detection and quantification of NETs in mixed cell populations. Zharkova O, Tay SH, Lee HY, Tripathi S, Ong W-Y, MacAry PA, Lim LHK, Lateef A, Connolly JE, Fairhurst A-M, *Cytometry A*, 2018. Dec 14. doi: 10.1002/cyto.a.23672. [Epub ahead of print] **Selected for highlights in Cytometry A**.

TLR9 deficiency breaks tolerance to RNA-associated antigens and upregulates TLR7 protein in *Sle1* mice. Celhar T, Thornhill S, Yasuga H, Lee HY, Zharkova O, Tripathi S, Kim HL, Bijin A, Lim LHK, Thamboo TP, Akira S, Wakeland EK, Connolly JE, Fairhurst A-M

2018, *Arthritis and Rheumatology*. 2018 Apr 24. doi: 10.1002/art.40535. IF:7.9

**Selected for A&R Clinical Highlights: 2018; Selected for A\*STAR RESEARCH**

**Highlights:** (<https://research.a-star.edu.sg/author/preview/8010/861e7a1b45b6d0db42f8678526760077>)

**Jan 2019. Selected for highlights in "The Rheumatologist" January 2019**

Annexin-A1 enhances breast cancer growth and migration by promoting alternative macrophage polarization in the tumour microenvironment. Moraes LA, Kar S, Lin FS, Gu T, Toh YQ, Ampomah PB, Sachaphibulkij K, Yap G, Zharkova O, Lukman HK, Fairhurst A-M, Kumar AP, Lim LHK. *Sci Rep.*; 2017; Dec 20;7(1):17925. doi: 10.1038/s41598-017-17622-5.

Decreased expression of CD244 (SLAMF4) on monocytes and platelets in patients with systemic lupus erythematosus. Mak A, Thornhill SI, Lee HY, Lee B, Poidinger M, Connolly JE, Fairhurst AM. *Clin Rheum*. 2017 Jun 8. doi: 10.1007/s10067-017-3698-2

Monocyte Siglec5/14 expression is upregulated in patients with SLE and correlates with disease severity. Thornhill SI, Mak A, Lee B, Lee HL, Poidinger M, Connolly JE, Fairhurst A-M.

*Rheumatology*; 2017 Jan 29. pii: kew498. doi: 10.1093/rheumatology/kew498 IF.5.2

**Highlighted in: A\*STAR RESEARCH: Nov 2017;**

Pathways leading to an Immunological Disease: Systemic Lupus Erythematosus Cravens P, Zharkova O, Celhar T, Satterthwaite A, Fairhurst A-M\*, Davis L\*. *Rheumatology*; Apr 1;56 (suppl\_1):i55-i66. IF.5.2

Editorial Forward by the Commissioning Editor; "The 2016 *Rheumatology* SLE review series; working for a better standard of care: A timely review series on SLE. *Rheumatology*. A-M Fairhurst 2017 Apr 1;56(suppl\_1):i1-i2. IF.5.2

Modelling clinical SLE: Similarities, Differences and Success Stories. Celhar T, Fairhurst A-M. *Rheumatology*. *Rheumatology (Oxford)*; December 2017 Apr 1;56(suppl\_1):i88-i99. IF.5.2

Clinical Utility of Circulating Anti-N-Methyl-D-Aspartate Receptor Subunits NR2A/B Antibody for the Diagnosis of Neuropsychiatric Syndromes in Systemic Lupus Erythematosus and Sjögren's Syndrome: An Updated Meta-Analysis. Tay SH, Fairhurst A-M, Mak A. *Autoimmunity Reviews*. 2017 Feb;16(2):114-122

Sim WJ, Malinarich F, Fairhurst A-M, Connolly JE. Generation of immature, mature and tolerogenic dendritic cells with differing metabolic phenotypes. *JoVE*. 2016 Jun 22 (112) <http://www.jove.com/video/54128>.

Arora S, Lim W, Lim A, Lee HY, Yan B, Fairhurst A-M, Alonso S, Lim LHK. Influenza A virus enhances its propagation through the modulation of Annexin-A1 dependent endosomal trafficking and apoptosis. *Cell Death Differ*. 2016 Jul;23(7):1243-56. doi: 10.1038/cdd.2016.19

Celhar T, Pereira-Lopes S, Thornhill SI, Lee HY, Dhillon MK, Poidinger M, Connolly JE, Lim LH, Biswas S, Fairhurst AM. TLR7 and TLR9 ligands regulate Antigen Presentation by Macrophages. 2015. *Int. Immunol*. Nov 13, 2015 doi:10.1093/intimm/dxv066

Celhar T, Hopkins R, Magalhães R, Lee H-Y, Hwang S-H, Jones LA, Casco J, Lee B, Thamboo TP, Mac A, Poidinger M, Connolly JE, Wakeland EK, Fairhurst A-M. RNA sensing by conventional dendritic cells is essential for the development of severe autoimmune pathology in a mouse model of SLE. *PNAS* 2015 Nov 10;112 (45):E6195-204.

**Highlighted in: A\*STAR RESEARCH: Oct 2016**

Malinarich F, Duan K, Abdull R, Bijin A, Poidinger M, Fairhurst AM, Connolly JE. High Mitochondrial respiration and glycolytic capacity represent a metabolic phenotype of human tolerogenic dendritic cells. *J. Immunol* 2015 Jun 1;194(11):5174-86.

Celhar T, Fairhurst A-M Toll-like receptors in systemic lupus erythematosus: potential for personalized treatment. (*Frontiers in Pharmacology* 2014: Dec 8;5:265.

Chao Y, Kaliaperumal N, Lee B, Chretien A-S, Fairhurst A-M, Connolly JE. Human plasmacytoid dendritic cells regulate IFN $\alpha$  production through activation induced splicing of IL-18. *J. Leukocyte Biol* 2014. Dec;96(6):1037-46

Pereira-Lopes S, Celhar T, Sans-Fons G, Serra M, Fairhurst A-M, Lloberas J, Celada A. The exonuclease Trex1 restrains the macrophage pro-inflammatory action. *J. Immunol.* 2013 Dec 15;191(12):6128-35

Skibinski D, Hanson B, Lin Y, von Messling V, Jegerlehner A, Sern Tee JB, Chye DH, Wong S, Ng A, Lee HY, Au B, Lee B, Poidinger M, Santoso L, Fairhurst A-M, Matter A, Bachmann M, Saudan P, Connolly JE. Enhanced neutralizing antibody titers and Th1 polarization from a novel Escherichia coli derived pandemic influenza vaccine *PLOS One.* Oct 18;8(10):e76571

Bist P, Shu S, Arora S, Nair S, Lim JY, Lee HY, Dayalan J, Gasser S, Biswas SK, Fairhurst AM\*, Lim LHK\*. Annexin-A1 regulates TLR-mediated IFN- $\beta$  production through an interaction with TBK-1 *J. Immunol.* Oct 15;191(8):4375-82

Hwang SH, Lee HL, Jones L, Yamamoto M, Dayalan J, Hopkins R, Zhou XJ, Yarovinsky F, Connolly JE, Lafaille M, Wakeland EK, Fairhurst AM. B cell-TLR7 expression drives anti-RNA autoantibody production and exacerbates disease in SLE-prone mice. *J. Immunol.* 2012 189(12): 5786-96

**Highlighted in: A\*STAR RESEARCH: Oct2012-Mar2013 (21) "How one protein accelerates lupus"**

Celhar T., Magalhães R., Fairhurst A-M. TLR7 and TLR9: when sensing self goes wrong. *Frontiers in Immunology* 2012 Sep;53(1-3):58-77. doi: 10.1007/s12026-012-8270-1

Wang A, Guilpain P, Chong BF, Chouzenoux S, Guillevin L, Du Y, Zhou XJ, Lin F, Fairhurst AM, Boudreaux C, Roux C, Wakeland EK, Davis L, Batteux F, Mohan C. Dysregulated expression of CXCR4/CXCL12 in subsets of patients with systemic lupus erythematosus. *Arthritis Rheum.* 2010 . 62(11):3436-46

Fairhurst A-M, Xie C, Fu Y, Wang A, Zhou XJ, Cibotti R, Coyle A, Connolly JE, Wakeland EK, Mohan C. Type I interferons produced by resident renal cells may promote end-organ disease in immune-mediated nephritis. *J. Immunol* 2009; 183 (10):6831-8.

Wang A, Fairhurst AM, Tus K, Subramanian S, Liu Y, Lin F, Igarashi P, Zhou XJ, Batteux F, Wong D, Wakeland EK, Mohan C. CXCR4/CXCL12 hyperexpression plays a pivotal role in the pathogenesis of lupus. *J. Immunol* 2009 182(7):4448-58.

Timmons BC, Fairhurst A-M, Mahendroo MS. Temporal Changes in Myeloid Cells in the Cervix during Pregnancy and Parturition. *J. Immunol* 2009 182 (5): 2700-7.

Fairhurst A-M, Hwang S-H, Wang A, Boudreaux C, Zhou XJ, Li Q, Connolly JE, Wakeland EK

Yaa-autoimmune phenotypes are conferred by an overexpression of TLR7. *E. J. Immunol* 2008, 38(7):1971-8

Fairhurst A-M\*, Mathian A, Connolly J E, Wang, A, Gray H, George T, Zhou J, Koutouzov S, Banchereau J, Wakeland EK Systemic IFNalpha drives kidney nephritis in B6.*Sle123* mice. *E. J. Immunol* 2008 38(7):1948-60.

Pisetsky DS, Fairhurst AM. The origin of extracellular DNA during the clearance of dead and dying cells. *Autoimmunity*. 2007 281-4.

Fairhurst A-M, Wallace PK, Jawad A, Goulding NJ. Rheumatoid peripheral blood phagocytes are primed for activation but have impaired Fc mediated ROS generation. *Arthritis Res Ther* 2007 9(2):R29

Fairhurst A-M, Wandstrat AE, Wakeland EK. Systemic lupus erythematosus: multiple immunological phenotypes in a complex genetic disease. *Adv Immunol* 2006:92 1-69

Wandstrat AE, Carr-Johnson F, Branch V, Gray H, Fairhurst A-M, Reimold A, Karp D, Wakeland EK, Olsen NJ. Autoantibody profiling to identify individuals at risk for systemic lupus erythematosus. *J Autoimmun*. 2006 27(3):153-60.

Ettinger RE, Sims GA, Fairhurst A-M, Da Silva Y-S, Robbins R, Spolski R, Leonard WJ,

Lipsky PE. IL-21 induces differentiation of human naive and memory B cells into antibody-secreting plasma cells. *J Immunol*. 2005 175(12):7867-79

Fairhurst AM, Connolly JE, Hintz KA, Goulding NJ, Rassias AJ, Yeager MP, Rigby W, Flower RJ, Wallace PK. Regulation and Localization of Endogenous Human Tristeraprolin *Arthritis Res Ther* 2003 (5):R214-R225

Murphy B, Nunes CN, Ronan JJ, Hanaway M, Fairhurst AM, Mellin TN. Centrally administered MTII affects feeding, drinking, temperature, and activity in the Sprague-Dawley rat. *J. App. Physiol.* 2000 Jul;89(1):273-82.

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## Publications by Year

### 2018

Skibinski DAG, Jones LA, Zhu YO, Xue LW, Au B, Lee B, Naim ANM, Lee A, Kaliaperumal N, Low JGH, Lee LS, Poidinger M, Saudan P, Bachmann M, Ooi EE, Hanson BJ, Novotny-Diermayr V, Matter A, Fairhurst AM, Hibberd ML, Connolly JE. Induction of Human T-cell and Cytokine Responses Following Vaccination with a Novel Influenza Vaccine. *Sci Rep.* 2018 Dec 20;8(1):18007.

Zharkova O, Tay SH, Lee HY, Shubhita T, Ong WY, Lateef A, MacAry PA, Lim LHK, Connolly JE, Fairhurst AM. A Flow Cytometry-Based Assay for High-Throughput Detection and Quantification of Neutrophil Extracellular Traps in Mixed Cell Populations. *Cytometry A.* 2018 Dec 14. [Epub ahead of print]

Celhar T, Yasuga H, Lee HY, Zharkova O, Tripathi S, Thornhill SI, Lu HK, Au B, Lim LHK, Thamboo TP, Akira S, Wakeland EK, Connolly JE, Fairhurst AM. TLR9 deficiency breaks tolerance to RNA-associated antigens and upregulates TLR7 protein in Sle1 mice. *Arthritis Rheumatol.* 2018 Apr 24. [Epub ahead of print]

Mak A, Thornhill SI, Lee HY, Lee B, Poidinger M, Connolly JE, Fairhurst AM. Brief report: Decreased expression of CD244 (SLAMF4) on monocytes and platelets in patients with systemic lupus erythematosus. *Clin Rheumatol.* 2018 Mar;37(3):811-816.

### 2017

Moraes LA, Kar S, Foo SL, Gu T, Toh YQ, Ampomah PB, Sachaphibulkij K, Yap G, Zharkova O, Lukman HM, Fairhurst AM, Kumar AP, Lim LHK. Annexin-A1 enhances breast

cancer growth and migration by promoting alternative macrophage polarization in the tumour microenvironment. *Sci Rep*. 2017 Dec 20;7(1):17925.

Thornhill SI, Mak A, Lee B, Lee HY, Poidinger M, Connolly JE, Fairhurst AM. Monocyte Siglec-14 expression is upregulated in patients with systemic lupus erythematosus and correlates with lupus disease activity. *Rheumatology (Oxford)*. 2017 Jun 1;56(6):1025-1030.

Fairhurst AM. A timely review series on SLE. *Rheumatology (Oxford)*. 2017 Apr 1;56(suppl\_1):i1-i2.

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## 2012

Hwang SH, Lee H, Yamamoto M, Jones LA, Dayalan J, Hopkins R, Zhou XJ, Yarovinsky F, Connolly JE, Curotto de Lafaille MA, Wakeland EK, Fairhurst AM. B Cell TLR7 Expression Drives Anti-RNA Autoantibody Production and Exacerbates Disease in Systemic Lupus Erythematosus-Prone Mice. *J Immunol*. 2012 Dec 15;189(12):5786-96.

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### **2005 and before**

Ettinger RE, Sims GA, Fairhurst A-M, Da Silva Y-S, Robbins R, Spolski R, Leonard WJ, Lipsky PE. IL-21 induces differentiation of human naive and memory B cells into antibody-secreting plasma cells. *J Immunol.* 2005 175(12):7867-79

Fairhurst AM, Connolly JE, Hintz KA, Goulding NJ, Rassias AJ, Yeager MP, Rigby W, Flower RJ, Wallace PK. Regulation and Localization of Endogenous Human Tristeraprolin. *Arthritis Res Ther.* 2003 5:R214-R225

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