

SIgN affiliated publications by Shanshan HOWLAND

Last updated: 13 Feb 2026

2026

Sharma P, Sharma RD, Sarkar B, Panwar V, Das M, Singh LV, Jain N, Chaturvedi S, Mehra L, Rathee A, Sharma S, [Foo S](#), Lee A, N PK, Das P, Viswanathan V, Kornfeld H, [Howland SW](#), Babu S, Nandicoori VK, Singhal A, Kumar D. Ly6G+ granulocytes-derived IL-17 limits protective host responses and promotes tuberculosis pathogenesis. *Elife*. 2026 Feb 5;13:RP100966.

Udinia S, Das M, Jamwal S, Markandey M, Bajaj A, Mehra L, Kedia S, Lim CFH, [Foo S](#), Das P, [Howland S](#), Suar M, [Singhal A](#), Ahuja V, Kumar D. AXL-dependent autophagy impairment differentiates monocyte-derived macrophages from Crohn's disease and intestinal tuberculosis. *Indian J Gastroenterol*. 2026 Feb 9.

2025

Banerjee A, Chatterjee M, Tan KJ, Tay S, Duan K, [Andiappan AK](#), [Howland SW](#), Aso Y, Aw SS. GABAergic neuronal dysfunction underlies tremor in a Drosophila model of Spinocerebellar ataxia 3. *Dis Model Mech*. 2025 Sep 18:dmm.052329.

Morgan D, [Zhang B](#), Fidan K, Pan W, Vaiyapuri TS, Raju A, Hei D, [See TY](#), Sari IN, Chan JW, Majee P, [Balachander A](#), Yu J, Wong AH, Mok MMH, [Foo SH](#), [Tang WL](#), [Ang N](#), [Tan I](#), Peng YF, Jaynes P, [Xu S](#), Ghosh G, Shahabi S, Jeyasekharan AD, Ikawa M, Zhang Y, [Howland SW](#), [Lau MC](#), Wang VY, [Lam KP](#), Tergaonkar V. The transcription complex p52-ETS1 is essential for germinal center formation. *Nat Immunol*. 2025 Jul 25.

2024

[Loh ZX](#), [Lim TW](#), [Howland SW](#), Awate S, Renia L, [Chen J](#), [Ren EC](#). Single-Cell Transcriptome Profiling of Scale Drop Disease Virus-Infected Asian Seabass (*Lates calcarifer*). *Aquac. J*. 2024, 4(2), 28-43.

2023

Coenen I, de Jong E, Jones AC, Khoo SK, Foo S, Howland SW, Ginhoux F, Le Souëf PN, Holt PG, Strickland DH, Laing IA, Leffler J. Impaired interferon response in plasmacytoid dendritic cells from children with persistent wheeze. *J Allergy Clin Immunol*. 2023 Dec 16:S0091-6749(23)02448-X.

Chua C, Sethi R, Ong J, Low JH, Yew YW, Tay A, Howland SW, Ginhoux F, Chen J, Common JEA, Andiappan AK. Late inflammatory monocytes define circulatory immune dysregulation observed in skin microbiome-stratified atopic dermatitis. *J Dermatol Sci*. 2023 Nov 3:S0923-1811(23)00236-0.

Park DS, Kozaki T, Tiwari SK, Moreira M, Khalilnezhad A, Torta F, Olivié N, Thiam CH, Liani O, Silvin A, Phoo WW, Gao L, Triebel A, Tham WK, Gonçalves L, Kong WT, Raman S, Zhang XM, Dunsmore G, Dutertre CA, Lee S, Ong JM, Balachander A, Khalilnezhad S, Lum J, Duan K, Lim ZM, Tan L, Low I, Utami KH, Yeo XY, Di Tommaso S, Dupuy JW, Varga B, Karadottir RT, Madathummal MC, Bonne I, Malleret B, Binte ZY, Wei Da N, Tan Y, Wong WJ, Zhang J, Chen J, Sobota RM, Howland SW, Ng LG, Saltel F, Castel D, Grill J, Minard V, Albani S, Chan JKY, Thion MS, Jung SY, Wenk MR, Pouladi MA, Pasqualini C, Angeli V, Cexus ONF, Ginhoux F. iPS-cell-derived microglia promote brain organoid maturation via cholesterol transfer. *Nature*. 2023 Nov;623(7986):397-405.

Shafi AM, Végvári Á, Howland SW, Zubarev RA, Rénia L, Penha-Gonçalves C. Brain endothelial cells exposure to malaria parasites links type I interferon signalling to antigen presentation, immunoproteasome activation, endothelium disruption, and cellular metabolism. *Front Immunol*. 13 March 2023

2022

Lee CY, Carissimo G, Teo TH, Tong SJM, Chang ZW, Rajarethinam R, Chua TK, Chen Z, Chee RS, Tay A, Howland SW, Ang KS, Chen J, Renia L, Ng LFP. CD8+ T Cells Trigger Auricular Dermatitis and Blepharitis in Mice after Zika Virus Infection in the Absence of CD4+ T Cells. *J Invest Dermatol*. 2022 Dec 23:S0022-202X(22)02893-7.

Kvedaraite E, Milne P, Khalilnezhad A, Chevrier M, Sethi R, Lee HK, Hagey DW, von Bahr Greenwood T, Mouratidou N, Jädersten M, Lee NYS, Minnerup L, Tan Y, Dutertre CA, Benac N, Hwang YY, Lum J, Loh AHP, Jansson J, Teng KWW, Khalilnezhad S, Xu W, Resteu A, Tey HL, Ng LG, Larbi A, Howland SW, Arnell H, Andaloussi SEL, Braier J, Rassidakis G, Galluzzo L, Dzionek A, Henter JI, Chen J, Collin M, Ginhoux F. Notch-dependent cooperativity between myeloid lineages promotes Langerhans cell histiocytosis pathology. *Sci Immunol*. 2022 Dec 23;7(78):eadd3330.

Ong HH, Andiappan AK, Duan K, Lum J, Liu J, Tan KS, Howland S, Lee B, Ong YK, Thong M, Chow VT, Wang DY. Transcriptomics of rhinovirus persistence reveals sustained expression of RIG-I and interferon-stimulated genes in nasal epithelial cells in vitro. *Allergy*. 2022 Mar 10. [Epub ahead of print]

2021

Andiappan AK, Asad M, Chua C, Sehanobish E, Ren Z, Chan XY, Lum J, Ang N, Duan K, Gersten A, Abuzeid WM, Akbar N, Gibber M, Howland S, Lee B, Rotzschke O, Porcelli SA, Jerschow E. Neutrophilic inflammation and epithelial barrier disruption in nasal polyps characterize NSAID-exacerbated respiratory disease. *Allergy*. 2021 Dec 18. [Epub ahead of print]

Baeza Garcia A, Siu E, Du X, Leng L, Franke-Fayard B, Janse CJ, Howland SW, Rénia L, Lolis E, Bucala R. Suppression of Plasmodium MIF-CD74 signaling protects against severe malaria. *FASEB J*. 2021 Dec;35(12):e21997.

Fong SW, Yeo NK, Chan YH, Goh YS, Amrun SN, Ang N, Rajapakse MP, Lum J, Foo S, Lee CY, Carissimo G, Chee RS, Torres-Ruesta A, Tay MZ, Chang ZW, Poh CM, Young BE, Tambyah PA, Kalimuddin S, Leo YS, Lye DC, Lee B, Biswas S, Howland SW, Renia L, Ng LFP. Robust Virus-Specific Adaptive Immunity in COVID-19 Patients with SARS-CoV-2 Δ382 Variant Infection. *J Clin Immunol*. 2021 Oct 30:1-16.

Blériot C, Barreby E, Dunsmore G, Ballaire R, Chakarov S, Ficht X, De Simone G, Andreato F, Fumagalli V, Guo W, Wan G, Gessain G, Khalilnezhad A, Zhang XM, Ang N, Chen P, Morgantini C, Azzimato V, Kong WT, Liu Z, Pai R, Lum J, Shihui F, Low I, Xu C, Malleret B, Kairi MFM, Balachander A, Cexus O, Larbi A, Lee B, Newell EW, Ng LG, Phoo WW, Sobota RM, Sharma A, Howland SW, Chen J, Bajenoff M, Yvan-Charvet L, Venteclef N, Iannacone M, Aouadi M, Ginhoux F. A subset of Kupffer cells regulates metabolism through the expression of CD36. *Immunity*. 2021 Aug 24:S1074-7613(21)00336-8.

Malleret B, El Sahili A, Tay MZ, Carissimo G, Ong ASM, Novera W, Lin J, Suwanarusk R, Kosaisavee V, Chu TTT, Sinha A, Howland SW, Fan Y, Gruszczczyk J, Tham WH, Colin Y, Maurer-Stroh S, Snounou G, Ng LFP, Chan JKY, Chacko AM, Lescar J, Chandramohanadas R, Nosten F, Russell B, Rénia L.

Plasmodium vivax binds host CD98hc (SLC3A2) to enter immature red blood cells. *Nat Microbiol.* 2021 Aug;6(8):991-999.

Rouers A, Appanna R, Chevrier M, Lum J, Lau MC, Tan L, Loy T, Tay A, Sethi R, Sathiakumar D, Kaur K, Böhme J, Leo YS, Renia L, Howland SW, Singhal A, Chen J, Fink K. CD27hiCD38hi plasmablasts are activated B cells of mixed origin with distinct function. *iScience.* 2021 Apr 29;24(5):102482.

2020

Lee WC, Russell B, Sobota RM, Ghaffar K, Howland SW, Wong ZX, Maier AG, Dorin-Semblat D, Biswas S, Gamain B, Lau YL, Malleret B, Chu C, Nosten F, Renia L. Plasmodium-infected erythrocytes induce secretion of IGFBP7 to form type II rosettes and escape phagocytosis. *Elife.* 2020 Feb 18;9:e51546.

2019

Claser C, Nguee SYT, Balachander A, Wu Howland S, Becht E, Gunasegaran B, Hartimath SV, Lee AWQ, Theng Theng Ho J, Bing Ong C, Newell EW, Goggi J, Ng LG, Renia L. Lung endothelial cell antigen cross-presentation to CD8+T cells drives malaria-associated lung injury. *Nat Commun.* 2019 Sep 18;10(1):4241.

Dutertre CA, Becht E, Irac SE, Khalilnezhad A, Narang V, Khalilnezhad S, Ng PY, van den Hoogen LL, Leong JY, Lee B, Chevrier M, Zhang XM, Yong PJA, Koh G, Lum J, Howland SW, Mok E, Chen J, Larbi A, Tan HKK, Lim TKH, Karagianni P, Tzioufas AG, Malleret B, Brody J, Albani S, van Roon J, Radstake T, Newell EW, Ginhoux F. Single-Cell Analysis of Human Mononuclear Phagocytes Reveals Subset-Defining Markers and Identifies Circulating Inflammatory Dendritic Cells. *Immunity.* 2019 Sep 17;51(3):573-589.e8.

2018

Fernandes P, Howland SW, Heiss K, Hoffmann A, Hernández-Castañeda MA, Obrová K, Frank R, Wiedemann P, Bendzus M, Rénia L, Mueller AK. A Plasmodium Cross-Stage Antigen Contributes to the Development of Experimental Cerebral Malaria. *Front Immunol.* 2018 Aug 14;9:1875.

Gun SY, Claser C, Teo TH, Howland SW, Poh CM, Chye RRY, Ng LFP, Rénia L. Interferon regulatory factor 1 is essential for pathogenic CD8+ T cell migration and retention in the brain during experimental cerebral malaria. *Cell Microbiol.* 2018 May;20(5):e12819.

Schmidt KE, Kuepper JM, Schumak B, Alferink J, Hofmann A, Howland SW, Rénia L, Limmer A, Specht S, Hoerauf A. Doxycycline inhibits experimental cerebral malaria by reducing inflammatory immune reactions and tissue-degrading mediators. *PLoS One.* 2018 Feb 13;13(2):e0192717.

Teo TH, Howland SW, Claser C, Gun SY, Poh CM, Lee WW, Lum FM, Ng LF, Rénia L. Co-infection with Chikungunya virus alters trafficking of pathogenic CD8+ T cells into the brain and prevents Plasmodium-induced neuropathology. *EMBO Mol Med.* 2018 Jan;10(1):121-138.

2017

Kam YW, Lee CY, Teo TH, Howland SW, Amrun SN, Lum FM, See P, Kng NQ, Huber RG, Xu MH, Tan HL, Choo A, Maurer-Stroh S, Ginhoux F, Fink K, Wang CI, Ng LFP, Rénia L. Cross-reactive dengue human monoclonal antibody protects against Zika virus. *JCI Insight.* 2017 Apr 20;2(8).

2015

Howland SW, Gun SY, Claser C, Poh CM, Rénia L. Measuring antigen presentation in mouse brain endothelial cells ex vivo and in vitro. *Nat Protoc*. 2015 Dec; 10(12):2016-26.

Howland SW, Ng GX, Chia SK, Rénia L. Investigating proteasome inhibitors as potential adjunct therapies for experimental cerebral malaria. *Parasite Immunol*. 2015 Nov; 37(11):599-604.

Howland SW, Poh CM, Rénia L. Activated brain endothelial cells cross-present malaria antigen. *PLoS Pathog*. 2015 Jun 5; 11(6):e1004963.

Howland SW, Claser C, Poh CM, Gun SY, Rénia L. Pathogenic CD8+ T cells in experimental cerebral malaria. *Semin Immunopathol*. 2015 May; 37(3):221-31.

2014

Poh CM, Howland SW, Grotenbreg GM, Rénia L. Damage to the blood-brain barrier during experimental cerebral malaria results from synergistic effects of CD8+ T cells with different specificities. *Infect Immun*. 2014; 82(11):4854-64.

Rénia L, Howland SW. Targeting the olfactory bulb during experimental cerebral malaria. *Trends Parasitol*. 2014; 30(8):375-6.

2013

Koh S, Shimasaki N, Suwanarusk R, Ho ZZ, Chia A, Banu N, Howland SW, Ong AS, Gehring AJ, Stauss H, Renia L, Sällberg M, Campana D, Bertoletti A. A practical approach to immunotherapy of hepatocellular carcinoma using T cells redirected against hepatitis B virus. *Mol Ther Nucleic Acids*. 2013; 2:e114.

Howland SW, Poh CM, Gun SY, Claser C, Malleret B, Shastri N, Ginhoux F, Grotenbreg GM, Rénia L. Brain microvessel cross-presentation is a hallmark of experimental cerebral malaria. *EMBO Mol Med*. 2013; 5(7):916-31.

2012

Rénia L, Howland SW, Claser C, Charlotte Gruner A, Suwanarusk R, Hui Teo T, Russell B, Ng LF. Cerebral malaria: mysteries at the blood-brain barrier. *Virulence*. 2012; 3(2):193-201.

2011

Malleret B, Claser C, Ong AS, Suwanarusk R, Sriprawat K, Howland SW, Russell B, Nosten F, Rénia L. A rapid and robust tri-color flow cytometry assay for monitoring malaria parasite development. *Sci Rep*. 2011; 1:118.

Howland SW, Poh CM, Rénia L. Directional, seamless, and restriction enzyme-free construction of random-primed complementary DNA libraries using phosphorothioate-modified primers. *Anal Biochem*. 2011; 416(1):141-3.

Rénia L. CD8+ T cells and IFN- γ mediate the time-dependent accumulation of infected red blood cells in deep organs during experimental cerebral malaria. *PLoS One*. 2011; 6(4):e18720.

2010

Hackel BJ, Ackerman M, Howland SW, Wittrup KD. Stability and CDR composition biases enrich binder functionality landscapes. *J Mol Biol.* 2010; 401(1): 84-96.

2008

Howland SW, Tsuji T, Gnjatic S, Ritter G, Old LJ, Wittrup KD. Efficient cross-priming using antigen-coated yeast particles. *J Immunother.* 2008; 31(7):607-19.

Howland SW, Wittrup KD. Antigen release kinetics in the phagosome are critical to cross presentation efficiency. *J Immunol.* 2008; 180(3):1576-83.

2006

Piatesi A*, Howland SW*, Rakestraw JA, Renner C, Robson N, Cebon J, Maraskovsky E, Ritter G, Old L, Wittrup KD. Directed evolution for improved secretion of concertestis antigen NY-ESO-1 from yeast. *Protein Expr Purif.* 2006; 48(2):232-42.

2004

Ma N*, Wu SS*, Ma YX, Wang X, Zeng J, Tong G, Huang Y, Wang S. Nerve growth factor receptor-mediated gene transfer. *Mol Ther.* 2004; 9(2):270-81.

* denotes shared first authorship