



Dr Julian Vivian

Research Fellow

Head, Vivian Research Group



Monash Biomedicine Discovery Institute
Infection and Immunity Program

EMAIL julian.vivian@monash.edu

Our work is principally focused on events central to infection and immunity. Specifically we work on deducing the structural arrangement of Killer-Cell Immunoglobulin-like Receptors (KIR) and their ligands and detail the molecular mode of interaction generating their complexes. This has important implications in disease and transplant outcomes. We also investigate immune reactions to specific drugs. This work is intended to lead to the better design and screening of new therapeutics.

Research Projects

1. Structural and functional investigation of KIR receptors
2. What causes drug hypersensitivity?

Selected significant publications:

1. Moradi S, Berry R, Pymm P, Hitchen C, Beckham SA, Wilce MC, Walpole NG, Clements CS, Reid HH, Perugini MA, Brooks AG, Rossjohn J, **Vivian JP**. 2015. The structure of the atypical killer cell immunoglobulin-like receptor, KIR2DL4. *J Biol Chem*. 290(16):10460-71.
2. **Vivian JP**, Saunders PM, Baschuk N, Beddoe T, Widjaja J, O'Connor GM, Hitchen C, Pymm P, Andrews DM, Gras S, McVicar DW, Rossjohn J, Brooks AG. 2015. The interaction of KIR3DL1*001 with HLA class I molecules is dependent upon molecular microarchitecture within the Bw4 epitope. *J Immunol*. 194(2):781-9.
3. de Weerd NA, **Vivian JP**, Nguyen TK, Mangan NE, Gould JA, Braniff SJ, Zaker-Tabrizi L, Fung KY, Forster SC, Beddoe T, Reid HH, Rossjohn J, Hertzog PJ. 2013. Structural basis of a unique interferon-signaling axis mediated via the receptor IFNAR1. *Nat Immunol* 14(9):901-7.
4. Illing PT, **Vivian JP**, Dudek NL, Kostenko L, Chen Z, Bharadwaj M, Miles JJ, Kjer-Nielsen L, Gras S, Williamson NA, Burrows SR, Purcell AW, Rossjohn J, McCluskey J. 2012. Immune self-reactivity triggered by drug-modified HLA-peptide repertoire. *Nature*. 486(7404):554-8.
5. **Vivian JP**, Duncan RC, Berry R, O'Connor GM, Reid HH, Beddoe T, Gras S, Saunders PM, Olshina MA, Widjaja JM, Harpur CM, Lin J, Malveste SM, Price DA, Lafont BA, McVicar DW, Clements CS, Brooks AG, Rossjohn J. 2011. Killer cell immunoglobulin-like receptor 3DL1-mediated recognition of human leukocyte antigen B. *Nature*. 479(7373):401-5.