Dr Peter Janes

Head, Receptor Biology and Cancer Therapeutics Laboratory

Monash Biomedicine Discovery Institute
Cancer Program

OTHER PROGRAM AFFILIATIONS

Development and Stem Cells

EMAIL peter.janes@monash.edu

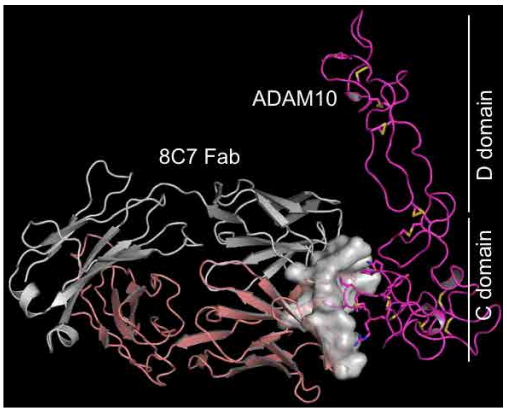
TELEPHONE +61 3 9902 9307

WEB med.monash.edu/biochem/staff/lackmann-staffpage.html

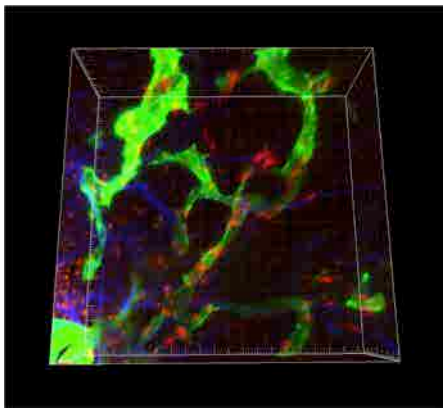
Our principal interest is cell surface proteins that promote tumour growth, in the context of the tumour microenvironment, and may be targeted by therapeutic antibodies. Our focus is on Eph receptor tyrosine kinases, due to their critical roles in tumour tissue patterning and stem cell maintenance, and on ADAM metalloproteases, which regulate signalling by diverse cell surface receptors including Ephs, erbBs and Notch. We employ various biochemical, structure/function and imaging techniques using tumour models in vitro and in vivo. Our antibodies against EphA3 and ADAM10 inhibit tumour growth in mice, and the EphA3 antibody is currently entering Phase II clinical trials.

Research Projects

1. **Characterisation of antibodies against ADAM metalloproteases for inhibiting cancer cell signalling**
2. **Cross-talk between erbB and Eph receptor tyrosine kinases and ADAM metalloproteases in cancer**
3. **EphA3 in tumour angiogenesis/the tumour microenvironment**



Antibody-bound ADAM10 structure



Anti-EphA3 antibody targeting to tumour vessels

Selected significant publications:

1. Atapattu L, Saha N, Chheang C, Eissman MF, Xu K, Vail ME, Hii L, Llerena C, Liu Z, Horvay K, Abud HE, Kusebauch U, Moritz RL, Ding B-S, Cao Z, Rafii S, Ernst M, Scott AM, Nikolov DB, Lackmann M and **Janes PW**. 2016. An activated form of ADAM 10 is tumor selective and regulates cancer stem-like cells and tumor growth. *J Exp Med* (In Press)
2. Vail ME, Murone C, Hii L, Tan A, Abebe D, **Janes PW**, Lee FT, Baer M, Palath V, Bebbington C, Yarranton G, Llerena C, Garic S, Abramson D, Cartwright G, Scott AM and Lackmann M. 2014. Targeting EphA3 inhibits cancer growth by disrupting the tumor stromal microenvironment. *Cancer Res* 74(16):4470-81.
3. **Janes PW**, Griesshaber B, Atapattu L, Nievergall E, Hii L, Mensinga A, Chheang C, Day B, Boyd AW, Bastiaens IP, Jorgensen C, Pawson T and Lackmann M. 2011. Eph receptor function is modulated by hetero-oligomerisation of A and B type Eph receptors. *J Cell Biol.*, 195(6): 1033-1045
4. **Janes PW**, Wimmer-Kleikamp SH, Frangakis AS, Treble K, Griesshaber B, Sabet O, Grabenbauer M, Ting AY, Saftig P, Bastiaens PI, and Lackmann M. 2009. Cytoplasmic Relaxation of Active Eph Controls Ephrin Shedding by ADAM10. *PLoS Biol* 7(10) e1000215
5. **Janes PW**, Saha N, Wimmer-Kleikamp SH, Barton WA, Kolev MV, Blobel CP, Himanen J-P, Lackmann M, Nikolov DB. 2005. Adam meets Eph: An ADAM10 substrate-recognition module acts as a molecular switch for ephrin cleavage in trans. *Cell* 123:291-304