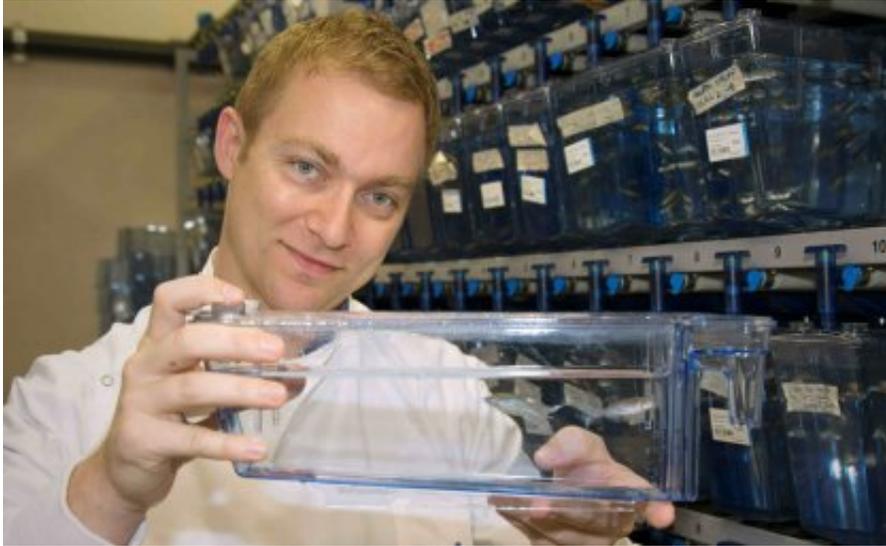


Kidney disease gene controls cancer highway

May 2 2014, by Bronwyn Adams



The University of Queensland's Dr Ben Hogan with the zebrafish that carries the Pkd1 mutation.

University of Queensland researchers have discovered that a gene that causes kidney disease also controls growth of the lymphatic system, a key route through which cancer spreads.

Pkd1 is the most frequently mutated gene in autosomal dominant polycystic [kidney disease](#), which causes cysts to develop on kidneys and can lead to renal failure.

Researchers, led by Dr Ben Hogan from UQ's Institute for Molecular Bioscience, (IMB) discovered that Pkd1 also controls lymphatic vessel

development.

"Lymphatic vessels are used by tumours as a 'highway' through which they can metastasise, or spread, to other tissues," Dr Hogan said.

"Most cancer deaths occur as a result of metastasis, so it is vital that we gain a better understanding of how [lymphatic vessels](#) grow and develop into a network.

"Pkd1 is a highly studied gene, so its unique role in lymphatic vessel formation is unexpected and gives us a unique entry point to understand how this process is regulated.

"Our hope is that this discovery will lead us to a new series of factors in lymphatic vessel formation that we may be able to exploit in future therapeutic strategies."

Dr Hogan and his collaborators made the discovery after identifying a zebrafish with a mutation in Pkd1 that caused reduced development of lymphatic vessels.

The molecular and cellular regulation of lymphatic vessel development is very similar in zebrafish and mammals, making the tiny, transparent fish ideal candidates for studying how these vessels develop in humans.

"The initial sprouting of these vessels is normal in zebrafish with mutated Pkd1 genes, but ongoing development of the network fails," Dr Hogan said.

More information: "Pkd1 Regulates Lymphatic Vascular Morphogenesis during Development." Coxam, Baptiste et al.. *Cell Reports*. In Press Corrected Proof. DOI: [dx.doi.org/10.1016/j.celrep.2014.03.063](https://doi.org/10.1016/j.celrep.2014.03.063)

Provided by University of Queensland

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