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### OTHER PROGRAM AFFILIATIONS



Cardiovascular Disease

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Development of novel drugs from animal venoms is a major focus of our current research. We have developed an ideal drug candidate that targets one of the main pathological features of Alzheimer's disease. Preclinical trials on this molecule are currently underway funded by the National Foundation for Medical Research and Innovation. Other major focus of our group is the role of the endothelin system in cardiovascular and renal disease. Together with researchers in engineering, our laboratory is aiming to develop a device similar to a glucometer with capacity to measure endothelin levels in circulation to detect renal disease early.

### Research Projects

1. Examining the effect of venom derived molecule(s) as novel drug leads for Alzheimer's disease
2. Examining the role of the endothelin system in cardiovascular and renal disease with a particular emphasis on characterising endothelins as biomarkers
3. Characterisation of toxins in animal venoms as potential lead compounds targeting cardiovascular disease

### Selected significant publications:

1. **Kuruppu S**, Rajapakse N, Parkington H, Smith I. *In Press*. Pharmacological hypothesis: Nitric oxide induced inhibition of ADAM-17 activity as well as vesicle release can in turn prevent the production of soluble Endothelin Converting Enzyme. *Pharmacology Research and Perspectives*.
2. Han H, Baumann K, Casewell NR, Ali SA, Dobson J, Koludarov I, Debono J, Cutmore SC, Rajapakse NW, Jackson TN, Jones R, Hodgson WC, Fry BG, **Kuruppu S**. 2017. The cardiovascular and neurotoxic effects of the venoms of six bony and cartilaginous fish species. *Toxins* (Basel) 9(2).
3. **Kuruppu S**, Rajapakse NW, Spicer AJ, Parkington HC, Smith AI. 2016. Stimulating the activity of amyloid-beta degrading enzymes: a novel approach for the therapeutic manipulation of amyloid-beta levels. *J Alzheimers Dis* 54: 891-895.
4. Smith AI, Rajapakse NW, Kleifeld O, Lomonte B, Hodgson WC, Conroy PC, Spicer AJ, Sikanyika NL, Small DH, Kaye DM, Parkington HC, Whisstock JC, **Kuruppu S**. 2016. N-terminal domain of *Bothrops asper* Myotoxin II Enhances the Activity of Endothelin Converting Enzyme and Neprilysin. *Sci Rep* 6, 22413.
5. **Kuruppu S**, Chou SH, Feske SK, Suh S, Hanchapola I, Lo EH, Ning M, Smith AI. 2014. Soluble and catalytically active endothelin converting enzyme-1 is present in cerebrospinal fluid of subarachnoid hemorrhage patients. *Mol Cell Proteomics* 13, 1091-4