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## PhD exit seminar: New soybean secondary metabolites that modulate angiogenesis.

Wednesday 24 April 2013, 1pm

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Slatyer Seminar Room R.N. Robertson Building (Bldg. 46), Linnaeus Way, ANU



Angiogenesis is a complex and highly regulated process of generating new capillary networks from mature blood vessels. Failure to grow blood vessels has been reported to be associated with a wide range of diseases including stroke, cardiovascular disorders and wound healing. Soybean is a source of nutrition containing metabolites that confer many beneficial health effects. Some of these metabolites have been found to modulate angiogenesis in animal tissue. A bioassay-directed discovery approach utilising size exclusion and liquid chromatography enabled us to isolate and purify a number of bioactive fractions from the crude plant extract. Using high resolution accurate

mass (LC-MS Q-TOF) and NMR data we were then able to elucidate the structure of two pro-angiogenic molecules. It was confirmed that totally synthetic preparations of the two molecules identified, exhibited comparable pro-angiogenic activity. The mode of action of these molecules was then investigated by studying their effect on endothelial cell growth, proliferation, migration, tube formation and adhesion to extra-cellular matrix components. It was found that the compounds enhanced endothelial cell proliferation and endothelial cell tube formation on an artificial extracellular matrix. These molecules may have therapeutic value where the formation of new blood vessels may be used to treat diseases, such as cardiovascular disease, and for wound healing.

Presented by

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