

SA RESEARCHERS SHINE AT THE NATIONAL WINE CENTRE TODAY
A showcase of cutting edge health and medical research in SA

There's nothing fishy about this chicken...

Omega-3 fatty acids, which abound in seafood, may reduce the risk of cardiovascular disease, diabetes and arthritis, yet most Australians do not meet the recommended daily intake. On the other hand, the average Australian consumes around 45 kg of chicken meat per year. Khaled Kanakri and colleagues at the University of Adelaide and SARDI have been optimising a way of delivering more omega-3 fatty acids to the Australian public by feeding flaxseed oil to chickens who can convert it to the fish-type omega-3s. Their research suggests that only 2-3 weeks of feeding flaxseed oil to chickens is sufficient to increase omega-3 fatty acids in chicken meat, paving the way for the production of high omega-3 chicken meat at an affordable price, allowing consumers to achieve recommended levels of omega-3 fatty acids intake without changing their dietary behaviour or putting more pressure on marine resources.

Hepatitis hope on the horizon

Hepatitis C virus is the leading cause of liver cancer, with 3-4 million new infections annually around the world, yet no vaccine currently available. This may soon change as a result of exciting research at the University of Adelaide. Jason Gummow and colleagues have generated a novel DNA vaccine against hepatitis C virus that is capable of inducing robust immune responses in mice. While this vaccine remains to be tested in human patients, it represents a promising candidate with the potential to eradicate the global threat of hepatitis C infection.

Gene delivery by aerosol

There has been considerable optimism about the potential of gene therapy – the delivery of functional genes to supplant mutated ones – for treating severe genetic conditions such as the lung disease in cystic fibrosis. However a major challenge in gene therapy is effectively delivering the therapeutic gene to the target site, in the case of cystic fibrosis to the lungs. For this purpose, Harshavardini Padmanabhan and colleagues at the University of Adelaide have focussed their efforts on designing an inhalable aerosol of the virus-based gene vector, recently discovering an improved formula for the effective delivery of therapeutic genes to the target cells. While still in the early stages of development, this mode of therapeutic administration is likely to overcome some of the gene delivery hurdles presently facing gene therapy for cystic fibrosis.

Breathing new life into old eggs

The age of women accessing in vitro fertilisation (IVF) technology continues to increase, with over 25% of all IVF cycles occurring in women over 40 years of age. Current IVF technology is substantially less effective for women aged over 40; one reason behind this may be an increase in old eggs of toxic molecules known as reactive oxygen species (ROS), which are related to a slowing in embryo development. Cassandra Carbone and colleagues at the University of Adelaide have recently shown that treating embryos from aged mothers with an antioxidant can reduce the negative effects of age on embryo development. While more work needs to be done, if animal studies are anything to go by, a simple antioxidant may be able to breath new life into old eggs.

Interview opportunities. Contact: *Carly Moores* 0409 094 798 - or Catherine West on 0415 928 211

The ASMR Medical Research Week
is supported by funding from the
Australian Government Department
of Health

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