



Dr Minni Änkö

Biomedicine Discovery Fellow

Head, RNA Processing in Health and Disease Laboratory



Monash Biomedicine Discovery Institute
Development and Stem Cells Program

EMAIL minni.anko@monash.edu

TELEPHONE +61 3 9905 0622

WEB med.monash.edu/anatomy/research/rna-processing-and-development-laboratory.html

RNA processing lies in the hearth of gene expression because each newly transcribed messenger RNA in the nucleus needs to undergo many processing steps before it can serve as a template for protein synthesis in the cytoplasm. The RNA processing and development laboratory is especially investigating the functions of SR proteins, a family of essential splicing factors, during early development and in the maintenance of cellular homeostasis in the adult. Gene expression programs dictate the development of a single pluripotent cell into a complex organism with hundreds of different cell types. Little is known about the role of SR proteins in the regulation of gene expression during development. In pluripotent cells and during development, RNA processing may be a particularly important mechanism of gene expression regulation because it allows for fine-tuning and plasticity of gene expression. Furthermore, our work has identified that SR proteins are not just an essential genes during early development, but also as cell type specific regulators of gene expression in the adult. The puzzling question is how general, ubiquitously expressed factors can have such specificity.

Research Projects

1. Splicing factors as novel regulators of cellular reprogramming
2. RNA processing during zebrafish development and in stem cells
3. Regulation of stem cells by RNA processing factors



Model organisms used in our research



Teratomas formed by iPS cells

Selected significant publications:

1. **Änkö ML**. 2014. Regulation of gene expression programs by serine-arginine rich splicing factors. *Semin Cell Dev Biol.* 32, 11-21.
2. **Änkö ML**, Müller-McNicoll M, Brandl H, Curk T, Gorup C, Henry I, Ule J, Neugebauer KM. 2012. The RNA-binding landscapes of two SR proteins reveal unique functions and binding to diverse RNA classes. *Genome Biol.* 13, R17.
3. **Änkö ML**, Neugebauer KM. 2012. RNA-protein interactions in vivo: global gets specific. *Trends in Biochemical Sciences,* 37, 255-62.
4. **Änkö ML**, Morales L, Henry I, Beyer A, Neugebauer KM. 2010. Global analysis reveals SRp20 and SRp75-specific mRNPs in cycling and neural cells. *Nat Struct Mol Biol,* 17, 962-970.
5. Sapra AK, **Änkö ML**, Grishina I, Lorenz M, Pabis M, Poser I, Rollins J, Weiland EM, Neugebauer KM. 2009. SR protein family members display diverse activities in the formation of nascent and mature mRNPs in vivo. *Mol Cell.* 34, 179-190.