Dr Simon Jones

Senior Lecturer in Musculoskeletal Ageing Research

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About

Dr Jones is a Senior Lecturer at the MRC-ARUK Centre for Musculoskeletal Ageing Research. His research interests include the inflammatory and metabolic mechanisms that drive osteoarthritis pathology, the role of skeletal muscle dysfunction and atrophy in chronic disease and understanding the functional role of non-coding RNAs in mediating inflammatory responses.

Qualifications

- PhD in Biochemistry, School of Biosciences, University of Nottingham (1999)
- PGCE in secondary education, University of Nottingham (1995)
- BSc (Hons) Biochemistry and Biological Chemistry, University of Nottingham (1994)

Biography

Dr Simon Jones graduated from the University of Nottingham (BSc Hons Biochemistry and Biological Chemistry 1994) and obtained a PhD in Biochemistry in 1999 (University of Nottingham) where he investigated the expression and function of calpain proteases in skeletal muscle atrophy. He then joined Prof Paul Greenhaff's group in the School of Biomedical Sciences, Queens Medical Centre Nottingham, where he spent 4 years as a Postdoctoral Fellow in integrated human molecular physiology. Here he investigated the effect of human disuse atrophy and exercise rehabilitation on muscle mass and function and on the expression of genes that mediate muscle mass.

In 2003 he joined AstraZeneca's osteoarthritis drug discovery team as a Senior Research Scientist to lead their target identification and target validation activities. During this time he investigated the role of the chemokine receptors and MAP kinases in mediating cartilage and bone remodeling and more recently the role of skeletal muscle dysfunction and adipose-secreted cytokines.

He is also research active in the field of RNA interference and has previously characterized and developed cell penetrating peptide tools aimed at in vitro and in vivo delivery of siRNA. Having worked on siRNA-mediated RNA interference, in 2006 he began to examine the role of the recently discovered microRNA family of non-coding RNAs in osteoarthritis. During this time he made an important contribution to the area of non-coding RNAs including being the first to report the expression profile of microRNAs in human osteoarthritis cartilage and bone tissue and to demonstrate that modulation of miRNA activity can mediate the production of inflammatory cytokines and catabolic proteases in human OA chondrocytes.

Before joining the University of Birmingham he spent 2 years as a Research Laboratory Head at Boehringer-Ingelheim Pharmaceuticals (Vienna), where he was team leader for identifying and validating novel antibody druggable targets for cancer. Here he also expanded his interest from miRNAs into examining the role of other non-coding RNAs including lincRNAs in tumour biology and utilized next generation sequencing data to identify potential drug targets and appropriate patient populations to enable a personalized medicine approach.

Research

1. Development and characterisation of a preclinical model of musculoskeletal ageing (in collaboration with Dr A Murton, Dr J Brameld and Dr T Parr, University of Nottingham)

2. The role of adipose-secreted cytokines in mediating osteoarthritis pathology.

3. The functional role of non-coding RNAs in mediating inflammation and remodelling of cartilage and bone in osteoarthritis (in collaboration with Prof M Lindsay, University of Bath, Prof D Walsh, University of Nottingham)

Publications

Jones SW, Berry P, Wluka A, Cicuttini F, Maciewicz RM. (2011) Temporal relationship between serum adipokines, biomarkers of bone and cartilage turnover, and cartilage volume loss in a population with clinical knee osteoarthritis. Arthritis and Rheumatism 63: 700-707.

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Moschos SA, Jones SW, Perry MM, Williams AE, Erjefalt JS, Turner JJ, Barnes PJ, Sproat BS, Gait MJ, Lindsay MA. (2007) Lung delivery studies using siRNA conjugated to TAT(48-60) and penetratin reveal peptide induced reduction in gene expression and induction of innate immunity. Bioconjug Chem. 5: 1450-1459.

Turner, JJ, Jones SW, Fabani, M, Iyanova, G, Arzumanov, AA, Gait, MJ. (2007) RNA targeting with peptide conjugates of oligonucleotides, siRNA and PNA. Blood, Cells, Molecules and Diseases. 1:1-7.

Turner, JJ, Jones SW, Moschos, SA, Lindsay, MA, Gait MJ. (2007) MALDI-TOF mass spectral analysis of siRNA degradation in serum confirms an RNAse A-like activity. Molecular Biosystems 1: 43-50.