University of Birmingham

Dr Ben Scheven PhD FHEA

Lecturer in Oral Cell Biology

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About

Dr Ben Scheven has an established track record in the cell biology of hard tissues and mesenchymal stem cells. Before he was appointed lecturer in at the University of Birmingham, Dr Scheven worked as a research scientist at different institutions in the Netherlands and the UK. His previous research focused on various aspects of bone cell biology and bone growth and metabolism in development and ageing, health and disease. He has extensive research experience in the development and application of tissue and cell culture models and bioassays to study cellular proliferation, differentiation and function. Dr Scheven has published a range of quality papers in international peer-reviewed journals.

Current research interests include dental pulp and bone cell biology, the role and application of mesenchymal stem cells in tissue repair and regeneration, nerve repair and neuronal stem cell differentiation, therapeutic ultrasound and oral cancer.

Qualifications

- Fellow of the Higher Education Academy (2011)
- PgCert LTHE (2011)
- PhD, University of Leiden (1986)
- MSc Biology, University of Leiden (1982)

Biography

After Dr Scheven completed his PhD study on the radiosensitivity of long bones and osteoclast development at the Laboratory of Cell Biology and Histology, Medical Faculty of the University of Leiden (The Netherlands), he moved to Aberdeen (Scotland, UK) to work at the Rowett Research Institute, where he further developed his research interests in the regulation of bone growth and metabolism.

Subsequently, Dr Scheven worked as research fellow / senior scientist at the Medical Faculty of the University of Utrecht (1989-1994), the Rowett Research Institute (1989-1999) and the University of Aberdeen (1999-2002).

Dr. Scheven was also a senior scientist at a Dundee-based, university-spinout, biotechnology company (2002-2005). He took up appointment as lecturer in Oral Cell Biology at the School of Dentistry of the University of Birmingham in January 2006.

Teaching

- BDS.
- BMedSc.
- MRes.
- MOrth.
- CLAD ILT

Postgraduate supervision

Supervisor for current postgraduate (MRes/PhD) projects:

Biological effects and therapeutic potential of ultrasound

Dental pulp stem cells for retinal nerve repair and regeneration.

Neurogenic potential of dental pulp stem cells

Role of mesenchymal stem cells in oral cancer invasion

Mesenchymal stem cells for craniofacial tissue regeneration

Research

Dental pulp stem cells & mesenchymal stem cells for tissue repair and regeneration

Dental pulp stem cells for nerve repair and regeneration.

Role of neurotrophic factors in mesenchymal cell biology and tissue repair.

Neurogenic potential of mesenchymal and dental pulp stem cells

Therapeutic ultrasound and dental tissue repair

Oral cancer

Other activities

- BDS Year-2 lead
- Member of Curriculum Development Committee, School of Dentistry
- Member of BDS Biological Sciences Subcommittee
- Elective Studies Scheme Coordinator
- Academic Personal Tutor
- Member of Postgraduate Committee, School of Dentistry
- Coordinator School of Dentistry postgraduate research seminars
- Biological Safety Officer and member of Health & Safety Advisory Group, Birmingham Dental School/Hospital
- Member of Centre for Learning and Academic Development Programme Committee, University of Birmingham
- Member of management committee and councillor of the Association for Basic Science Teachers in Dentistry (ABSTD)
- Committee member / councillor of Mineralised Tissue Research Group (MINTIG) of the British Society for Dental Research
- Frequent reviewer of scientific papers submitted to various international scientific journals and research project grant applications

Publications

Mead B, Berry M, Logan A, Leadbeater W, Scheven BA (2013) Intravitreally transplanted dental pulp stem cells promote neuroprotection and axon regeneration of retinal ganglion cells after optic nerve injury. **Invest Opthamol Visual Sci** 54:7544-7556

Ghorayeb SR, Patel U, Walmsley AD, Scheven BA (2013) Biophysical characterisation of low-frequency ultrasound interaction with dental pulp stem cells. **J Ther Ultrasound** 1:12.

Ghorayeb SR, Petrakis P, McGrath M, Scheven BA (2013) Measurement of ultrasonic phase and group velocities in human dental hard tissue. **J Ther Ultrasound** 1:5

Man J, Shelton RM, Landini G, Cooper PR, Scheven BA (2012). Low intensity ultrasound stimulates osteoblast migration at different frequencies. **J Bone Miner Metab** 30: 602-607

J Man, Shelton RM, Cooper PR, Scheven BAA (2012) Low-intensity low-frequency ultrasound promotes proliferation and differentiation of odontoblast-like cells. **J Endod**38: 608-613.

Gale Z, Cooper PR, Scheven BA (2012) Glial cell line-derived neurotrophic factor influences proliferation of osteoblastic cells. **Cytokine** 57: 276-281.

Smith AJ (http://www.ncbi.nlm.nih.gov/pubmed?term=%22Smith%20AJ%22%5BAuthor%5D) , **Scheven BA (http://www.ncbi.nlm.nih.gov/pubmed?term=%22Scheven%20BA%22%5BAuthor%5D)** , **Takahashi Y (http://www.ncbi.nlm.nih.gov/pubmed?term=%22Takahashi%20Y%22%5BAuthor%5D)** , **Ferracane JL, (http://www.ncbi.nlm.nih.gov/pubmed?term=%22Ferracane%20JL%22%5BAuthor%5D)** , **Shelton RM (http://www.ncbi.nlm.nih.gov/pubmed?term=%22Shelton%20RM%22%5BAuthor%5D)** , **Cooper PR (http://www.ncbi.nlm.nih.gov/pubmed?term=%22Cooper%20PR%22%5BAuthor%5D)** (2012) Dentine as a bioactive extracellular matrix. **Arch Oral Biol** 57:109-121, 2012

Scheven BAA (2012) Perceived relevance of oral biology by dental students. **Eur J Dent Edu**, 16:e64-72.

Gale Z, Cooper PR, Scheven BA(2011) Effects of glial cell line-derived neurotrophic factor on dental pulp cells. **J Dental Research** 90: 1240-1245.

Scheven BAA, Shelton RM, Cooper PR, Walmsley AD, Smith AJ (2009) Therapeutic ultrasound for dental tissue repair. **Med Hypoth** 73: 591–593.

Scheven BA, Man J, Millard JL, Cooper PR, Lea SC, Walmsley AD, Smith AJ (2009) VEGF and odontoblast-like cells: Stimulation by low frequency ultrasound. **Arch Oral Biol** 54: 185 – 191.

Scheven BA, Millard JL, Cooper PR, Lea SC, Walmsley AD, Smith AJ (2007) Short-term *in vitro* effects of low frequency ultrasound on odontoblast-like cells. **Ultrasound Med Biol** 33:1475-1482.

Scheven BAA, Marshall D, Aspden RM (2002) *In vitro* behaviour of human osteoblasts on dentin and bone. **Cell Biol. Int.** 26:337-346.

Aspden RM, Scheven BAA, Hutchison JD (2001) Generalised osteoarthritis is a systemic disorder involving stromal cell differentiation and lipid metabolism. **Lancet** 357:1118-1120.

Scheven BAA, Milne JS, Hunter I, Robins SP (1999) Macrophage-inflammatory protein-1a regulates pre-osteoclast differentiation *in vitro*. **Biochem Biophys Res Commun** 254: 773-778.

Scheven BAA, Milne JS, Robins SP (1998) A sequential culture approach to study osteoclast differentiation from non-adherent porcine bone marrow cells**. In Vitro Cell Dev Biol** 34:568-577.