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J.E. Davies



Dr. John E. Davies

Professor

Dentistry / Institute of Biomaterials and Biomedical Engineering

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Current academic / hospital appointments

- Professor of Biomaterials, Faculty of Dentistry and Institute for Biomaterials and Biomedical Engineering, University of Toronto
- Cross-appointed: Department of Surgery, Faculty of Medicine
- Cross-appointed: Department of Chemical Engineering and Applied Chemistry, Faculty of Applied Science and Engineering
- Cross-appointed: Department of Materials Science and Engineering, Faculty of Applied Science and Engineering.

Education

- 1998 – Doctor of Science Biomaterials, University of London, UK
- 1984 – Doctor of Philosophy, Faculty of Medicine, University of London, UK
- 1973 – Bachelor Dental Surgery, Welsh National School of Medicine, Cardiff, UK

Courses

Undergraduate:

- DEN 150Y, Biomaterials

Graduate/Postgraduate:

- DEN1081H, "Bone Interfacing Implants", Faculty of Dentistry

Continuing Education:

- Biomaterials and Implant/Reconstructive Dentistry

Research interests

- Peri-implant bone healing
- Novel biomaterials
- Bone tissue engineering
- Sourcing and expanding human mesenchymal cells
- Cell based therapies

Selected Recent publications

Turner NJ, Jones HS, Davies JE, Canfield AE (2008) Cyclic Stretch-induced TGF β 1/SMAD Signaling Inhibits Adipogenesis in Umbilical Cord Progenitor Cells. *Biochem Biophys Res Commun*, 377(4): 1147-51.

Mendes VC, Davies JE. (2008) Discrete calcium phosphate nanocrystalline deposition enhances osteoconduction on titanium-based implant surfaces. *J Biomed Mater Res A*, (Epub Jun 18, ahead of print).

Ennis J, Götherström C, Le Blanc K, Davies JE (2008) In vitro immunologic properties of human umbilical cord perivascular cells, *Cytotherapy*, 10(2): 174-81.

Davies JE. (2007) Bone Bonding at natural and biomaterial surfaces. *Biomaterials*, 28(34):5058-67 (Epub Aug 13).

This paper was published as a "Leading Opinion" paper.

Mendes VC, Moineddin R, Davies JE (2007) The effect of discrete calcium phosphate nanocrystals on bone-bonding to titanium surfaces. *Biomaterials*, 28(32): 4748-55 (Epub Aug 13).

Baksh D, Zandstra PW, Davies JE (2007) A non-contact suspension culture approach to the culture of osteogenic cells derived from a CD49e(low) subpopulation of human bone marrow-derived cells. *Biotechnology and Bioengineering*, 98(6):1195-1208.

This paper was selected for a "Spotlight" review "New Hope for Mesenchymal Stem Cell Therapies" in *Biotechnology and Bioengineering*, 98(6): 1161.

Lickorish D, Guan L, Davies JE (2007) A three-phase, fully resorbable, polyester/calcium phosphate scaffold for bone tissue engineering: Evolution of scaffold design. *Biomaterials*, 28(8):1495-502.

Baksh D, Davies JE, Zandstra PW (2005) Soluble factor crosstalk between human bone marrow-derived hematopoietic and mesenchymal cells enhances in vitro CFU-F and CFU-O growth and reveals heterogeneity in the mesenchymal progenitor cell compartment. *Blood*, 106(9):3012-9.

Kikuchi L, Park JY, Victor C, Davies JE (2005) Platelet interactions with calcium-phosphate-coated surfaces. *Biomaterials*, 26(26):5285-95.

Sarugaser R, Lickorish D, Baksh D, Hosseini M, Davies JE (2005) Human umbilical cord perivascular (HUCPV) cells: a source of mesenchymal progenitors. *Stem Cells*, 23(2):220-9.

Gomi K, Kanazashi M, Lickorish D, Arai T, Davies JE (2004) Generation of haematopoietic marrow following subcutaneous delivery of rat marrow cells on a biodegradable scaffold into nude mice.

Awards and Honours

- 2002 - Clemson Award for Basic Research (USA)
- 2000 – Fellow, Biomaterials Science & Engineering (FBSE) International
- 1998 – Doctor of Science, University of London (UK)

Current Editorships

- Journal of Tissue Engineering and Regenerative Medicine
- European Cells & Materials

Students

Gómez Aristizábal, A. "HUCPVCs as a stromal feeder population for hepatocytes"

Estrada, C., "Genetic modifications of HUCPVCs for osteogenesis"

Emrani, H., "HUCPVCs in tendon repair"

Matta, R., "Xenogeneic grafting of HUCPVCs in immunocompetent rats"

Mahno, E. "Early peri-implant endosseous healing in models of systemic disease"

Ko, J. "Investigation of cement line maturation in vivo with special emphasis on mineralization"

Grant, D. "Investigating how pore size of a bone biomaterial influences angiogenesis and bone regeneration"

Current research grants

Research group is supported by federal and industry grants.

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