



CAO Tong, *PhD, DDS*
Cert Adv Oral Surg, Cert Adv Maxillofac Surg
Principal Investigator, Stem Cell Lab
#03-04, DSO (Kent Ridge) Building, 27 Medical Drive
Associate Professor, Department of Oral and Maxillofacial Surgery
5 Lower Kent Ridge Road, 119074 Singapore
Tel 65164630, Fax 67745701
Email: omscaot@nus.edu.sg
Web: <http://www.dentistry.nus.edu.sg/faculty/staff/ct.htm>



MAJOR RESEARCH INTERESTS

1. Somatic differentiation of human embryonic stem cells
2. Human embryonic stem cells for toxicological study
3. Human embryonic stem cells for drug discovery
4. Human embryonic stem cells for studies of disease and therapy
5. Tissue regeneration
6. Stem cells for cell therapy

SELECTED PUBLICATIONS

Liu H, Toh WS, Lu K, Macary PA, Kemeny DM, **CAO T**. A subpopulation of mesenchymal stromal cells with high osteogenic potential. *J Cell Mol Med*. 2009 Jun 5. [Epub ahead of print]

Chen X, Song XH, Yin Z, Zou XH, Wang LL, Hu H, **CAO T**, Zheng M, Ouyang HW. Stepwise Differentiation of Human Embryonic Stem Cells Promotes Tendon Regeneration by Secreting Fetal Tendon Matrix and Differentiation Factors. *Stem Cells*. 2009, [27:1276](#)

Toh WS, Guo X, Choo AB, Lu K, Lee EH, **CAO T**. Differentiation and Enrichment of Expandable Chondrogenic Cells from Human Embryonic Stem Cells in Vitro. *J Cell Mol Med*. 1 May 2009 [Epub ahead of print]

Vinoth KJ, Heng BC, Poonepalli A, Banerjee B, Balakrishnan L, Lu K, Hande MP, **CAO T**. Human embryonic stem cells may display higher resistance to genotoxic stress, as compared to primary explanted somatic cells. *Stem Cells Dev*. 2008, 17:599

CAO T, Lu K, Fu X, Heng BC. Differentiated fibroblastic progenies of human embryonic stem cells for toxicology screening. *Cloning and Stem Cells*. 2008, 10:1

Toh WS, Yang Z, Liu H, Heng BC, Lee EH, **CAO T**. Effects of BMP2 and Culture Conditions on Extent of Chondrogenesis from Human Embryonic Stem Cells. *Stem Cells*, 2007, 25:950

Ge Z, Hu Y, Heng BC, Yang Z, Ouyang HW, Lee EH, **CAO T**. Osteoarthritis and Therapy. *Arthritis Rheum*. 2006, 55:493

Liu H, Kemeny MD, Heng BC, Ouyang HW, Melendez AJ, **CAO T**. The immunogenicity and immuno-modulatory function of osteogenic cells differentiated from mesenchymal stem cells. *J Immunol*. 2006, 176:2864

Heng BC, **CAO T**. Refund fertility-treatment costs for donated embryos. *Nature*. 2006, 443:26

CAO T, Heng BC, Ye CP, Liu H, Toh WS, Robson P, Li P, Hong YH, Stanton LW. Osteogenic differentiation within intact human embryoid bodies result in a marked increase in osteocalcin secretion after 12 days of in vitro culture, and formation of morphologically distinct nodule-like structures. *Tissue & Cell*. 2005, 37:325

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CAO T, Shirota T, Ohno K, Michi KI. Mineralized bone loss in partially edentulous trabeculae of ovariectomized rabbit mandibles. *J Periodontal Res*. 2004 Feb;39(1):37-41

Rai B, Teoh SH, Ho KH, Hutmacher D, **CAO T**, Chen F, Yacob K. The effect of rhBMP-2 on canine osteoblasts seeded onto 3D bioactive polycaprolactone scaffolds. *Biomaterials*. 2004 Nov;25(24):5499-5506. Epub 2004 Feb 28

Heng BC, **CAO T**, Stanton LW, Robson P, Olsen B. Strategies for directing the differentiation of stem cells into the osteogenic lineage in vitro. *J Bone Miner Res*. 2004, 19:1379

CAO T, Ho KH, Teoh SH. Scaffold design and in vitro study of osteochondral coculture in a three-dimensional porous polycaprolactone scaffold fabricated by fused deposition modeling. *Tissue Eng*. 2003;9:S103