



## Dr Tina Chowdhury

BSc, MSc, PhD, PGCAP, SFHEA

School of Engineering and Materials Science Queen Mary University of London Mile End Road London E1 4NS

tel: +44 (0)20 7882 7560 email: t.t.chowdhury@qmul.ac.uk web: www.sems.qmul.ac.uk/t.t.chowdhury

## 2024

**Role of Myofibroblasts in the Repair of Iatrogenic Preterm Membranes Subjected to Mechanical Stimulation.** Costa E, Thrasivoulou C, Becker DL, Deprest J, David AL and Chowdhury TT. *Prenatal Diagnosis vol. 45, (1) 102-112.Wiley.* 

## 2023

**Cx43 regulates mechanotransduction mechanisms in human preterm amniotic membrane defects.** Costa E, Thrasivoulou C, Becker DL, Deprest JA, David AL and Chowdhury TT. *Prenatal Diagnosis.Wiley*.

#### Machine learning and disease prediction in obstetrics.

Arain Z, Iliodromiti S, Slabaugh G, David AL and Chowdhury TT. Current Research in Physiology vol. 6, Elsevier.

## 2021

# Cx43 mediates changes in myofibroblast contraction and collagen release in human amniotic membrane defects after trauma.

Costa E, Okesola BO, Thrasivoulou C, Becker DL, Deprest JA, David AL and Chowdhury TT. Scientific Reports vol. 11, (1). Springer Nature.

# The Mechanical Interplay Between Differentiating Mesenchymal Stem Cells and Gelatin-Based Substrates Measured by Atomic Force Microscopy.

Meng H, Chowdhury TT and Gavara N. Frontiers in Cell and Developmental Biology vol. 9, Frontiers.

## 2020

**Potential sealing and repair of human FM defects after trauma with peptide amphiphiles and Cx43 antisense.** Barrett DW, Okesola BO, Costa E, Thrasivoulou C, Becker DL, Mata A, Deprest JA, David AL and Chowdhury TT. *Prenatal Diagnosis vol. 41, (1) 89-99.Wiley.* 

Multicomponent hydrogels for the formation of vascularized bone-like constructs in vitro. Derkus B, Okesola BO, BARRETT DW, D Este M, Chowdhury TT, Eglin D and Mata A. *Acta Biomaterialia.Elsevier*.

# Microwave Frequency Dependent Dielectric Properties of Blood as a Potential Technique to Measure Hydration.

Dawsmith W, Ohtani N, Donnan R, Naftaly M, Dudley RA and Chowdhury TT. *IEEE Access 1-1.Institute of Electrical and Electronics Engineers (IEEE).* 

# Magnetically responsive layer-by-layer microcapsules can be retained in cells and under flow conditions to promote local drug release without triggering ROS production.

Read JE, Luo D, Chowdhury TT, Flower RJ, Poston RN, Sukhorukov GB and Gould DJ. *Nanoscale vol. 12, (14)* 7735-7748.*Royal Society of Chemistry (Rsc).* 

## 2019

#### Strategies to Repair Defects in the Fetal Membrane.

Chowdhury TT, Barrett DW and David AL. Fetal Therapy 520-531. Cambridge University Press (Cup).

Targeting mechanotransduction mechanisms and tissue weakening signals in the human amniotic membrane.

BARRETT DW, John RK, Thrasivoulou C, MATA A, Deprest JA, Becker DL, David AL and CHOWDHURY TINA. *Scientific Reports.Nature Publishing Group.* 

## 2018

#### Corrigendum for Engels, Joyeux, Van der Merwe, et al. (2017) DOI: 10.1002/pd.5191.

Engels AC, Joyeux L, Van der Merwe J, Jimenez J, Pranpanus S, Barrett DW, Connon C, Chowdhury TT, David AL and Deprest J. *Prenatal Diagnosis vol. 38*, (6) 471-471. *Wiley*.

## 2017

#### Tissuepatch is biocompatible and seals iatrogenic membrane defects in a rabbit model.

Engels AC, Joyeux L, Van der Merwe J, Jimenez J, Prapanus S, Barrett DW, Connon C, Chowdhury TT, David AL and Deprest J. *Prenatal Diagnosis vol. 38, (2) 99-105.Wiley.* 

#### Trauma induces overexpression of Cx43 in human fetal membrane defects.

Barrett DW, Kethees A, Thrasivoulou C, Mata A, Virasami A, Sebire NJ, Engels AC, Deprest JA, Becker DL, David AL and Chowdhury TT. *Prenatal Diagnosis vol. 37, (9) 899-906.* 

## 2016

## Connexin 43 is overexpressed in human fetal membrane defects after fetoscopic surgery.

Barrett DW, David AL, Thrasivoulou C, Mata A, Becker DL, Engels AC, Deprest JA and Chowdhury TT. *Prenatal Diagnosis vol. 36*, (10) 942-952.

#### Oxygen tension modulates the effects of TNF in compressed chondrocytes.

Tilwani RK, Vessillier S, Pingguan-Murphy B, Lee DA, Bader DL and Chowdhury TT. Inflamm Res.

## 2015

#### Imaging modalities for the in vivo surveillance of mesenchymal stromal cells.

Hossain MA, Chowdhury T and Bagul A. J Tissue Eng Regen Med vol. 9, (11) 1217-1224.

#### C-type natriuretic peptide signalling drives homeostatic effects in human chondrocytes.

Peake NJ, Bader DL, Vessillier S, Ramachandran M, Salter DM, Hobbs AJ and Chowdhury TT. *Biochemical and Biophysical Research Communications vol.* 465, (4) 784-789.*Elsevier*.

# Polyelectrolyte microencapsules loaded with C-type natriuretic peptide protect cartilage from IL-1B induced damage.

Peake N, Pavlov A, D'Souza A, Alfasahin I, Pingaan-Murphy B, Sukhurukov G, Hobbs A and Chowdhury T. Osteoarthritis and Cartilage vol. 23, a141-a142.Elsevier.

# Controlled Release of C-Type Natriuretic Peptide by Microencapsulation Dampens Proinflammatory Effects Induced by IL-1 in Cartilage Explants.

Peake NJ, Pavlov AM, D'Souza A, Pingguan-Murphy B, Sukhorukov GB, Hobbs AJ and CHOWDHURY TT. *Biomacromolecules.American Chemical Society*.

## 2014

## Tensile strain increased COX-2 expression and PGE2 release leading toweakening of the human amniotic membrane.

Chowdhury B, David AL, Thrasivoulou C, Becker DL, Bader DL and Chowdhury TT. *Placenta vol. 35, (12)* 1057-1064.Elsevier.

**Role of C-type natriuretic peptide signalling in maintaining cartilage and bone function.** Peake NJ, Hobbs AJ, Pingguan-Murphy B, Salter DM, Berenbaum F and Chowdhury TT. *Osteoarthritis and Cartilage vol. 22, (11) 1800-1807.Elsevier.* 

#### Role of C-type natriuretic peptide signaling in maintaining cartilage and bone function.

Peake NJ, Hobbs AJ, Pingguan-Murphy B, Salter DM, Berenbaum F and CHOWDHURY TT. Osteoarthritis and Cartilage vol. online edition, Elsevier/Science Direct.

#### Imaging modalities for the in vivo surveillance of mesenchymal stromal cells.

Hossain MA, CHOWDHURY TT and Bagul A. Journal of Tissue Engineering and Regenerative Medicine. Wiley.

# PFM.37 Cyclic tensile strain increases PGE2 release leading to weakening of the human term amniotic membrane.

Chowdhury B, David A, Bader D, Thrasivoulou C, Becker D and Chowdhury T. *Archives of Disease in Childhood Fetal & Neonatal vol. 99, (Suppl 1).Bmj.* 

## 51 integrin mediates compression-induced inhibition of catabolic effects induced by fibronectin fragments in an oxygen-dependent manner.

Parker E, Vessillier S, Abas WW, Bader DL, Pinguaan-Murphy B and Chowdhury TT. Osteoarthritis and Cartilage vol. 22, Elsevier.

## 2013

#### Low oxygen tension increased FN-f induced catabolic activities - response prevented with biomechanical signals.

Parker E, Vessillier S, Pinguaan-Murphy B, Wan Abas WAB, Bader DL and Chowdhury TT. Arthritis Research and Therapy vol. 15, (5) R163-R163.Biomed Central.

Natriuretic peptide receptors regulate cytoprotective effects in a human ex vivo 3D/bioreactor model. Peake N, Su N, Ramachandran M, Achan P, Salter DM, Bader DL, Moyes AJ, Hobbs AJ and Chowdhury TT. *Arthritis Research and Therapy vol. 15, (4).* 

#### Optimisation of quantitative real-time PCR studies in cartilage mechanobiology.

Akanji O, Salter DM and Chowdhury TT. Pcr Technology. Current Innovations 271-281. Editors: Nolan T and Bustin SA. Crc Pressi Llc.

# FN-f induced catabolic activities are dependent on oxygen tension in chondrocyte/agarose constructs subjected to biomechanical signals.

Parker E, Pinguuan-Murphy B, Bader DL and Chowdhury TT. Osteoarthritis and Cartilage vol. 21, Elsevier.

#### Biological vascular grafts for hemodialysis access.

Hossain MA, Frampton AE, Chowdhury TT and Morsey M. Expert Rev Med Devices vol. 2, (10) 171-175. Informa Healthcare.

#### **Optimization of Quantitative Real-Time PCR for Studies in Cartilage Mechanobiology.**

Akanji O, Salter D and Chowdhury T. Pcr Technology: Current Innovations, Third Edition 271-281.

## 2012

# Biomechanical conditioning enhanced matrix synthesis in nucleus pulposus cells cultured in agarase constructs with TGF.

CHOWDHURY TT, Tilwani RK and Bader DL. *Journal Functional Biomaterials vol. 3, 23-26*.Editors: Goldsmith EC and Lin SK.

## 2011

# Biomechanical signals and the C-type natriuretic peptide counteract catabolic activities induced by IL-1 in chondrocyte/agarose constructs.

Ramachandran M, Achan P, Salter DM, Bader DL and Chowdhury TT. Arthritis Research and Therapy vol. 13, (5).

**Biomechanical influence of cartilage homeostasis in health and disease.** Bader DL, Salter DM and Chowdhury TT. *Arthritis vol. 2011*,.

# Quantification of mRNA using real-time PCR and Western blot analysis of MAPK events in chondrocyte/agarose constructs.

Lee DA, Brand J, Salter D, Akanji O-O and Chowdhury TT. Methods Mol Biol vol. 695, 77-97.

## 2010

## Biomechanical modulation of collagen fragment-induced anabolic and catabolic activities in chondrocyte/agarose constructs.

Chowdhury TT, Schulz RM, Rai SS, Thuemmler CB, Wuestneck N, Bader A and Homandberg GA. Arthritis Research and Therapy vol. 12, (3).

#### Mechanical loading modulates chondrocyte primary cilia incidence and length.

McGlashan SR, Knight MM, Chowdhury TT, Joshi P, Jensen CG, Kennedy S and Poole CA. *Cell Biology International vol. 34*, (5) 441-446.

# Dynamic compression alters NFB activation and IB- expression in IL-1-stimulated chondrocyte/agarose constructs.

Akanji OO, Sakthithasan P, Salter DM and Chowdhury TT. Inflammation Research vol. 59, (1) 41-52.

## 2009

### 458 DYNAMIC COMPRESSION ALTERS NF?B ACTIVATION AND I?B- EXPRESSION IN IL-1 STIMULATED CHONDROCYTE/AGAROSE CONSTRUCTS.

Akanji OO, Salter DM and Chowdhury TT. Osteoarthritis and Cartilage vol. 17, s245-s246. Elsevier.

Dynamic compression inhibits fibronectin fragment induced iNOS and COX-2 expression in chondrocyte/agarose constructs.

Raveenthiran SP and Chowdhury TT. Biomechanics and Modeling in Mechanobiology vol. 8, (4) 273-283.

## 2008

451 DYNAMIC COMPRESSION COUNTERACTS FIBRONECTIN-FRAGMENT INDUCED INOS AND COX-2 EXPRESSION IN CHONDROCYTE/AGAROSE CONSTRUCTS.

Raveenthiran SP and Chowdhury TT. Osteoarthritis and Cartilage vol. 16, s195-s196. Elsevier.

Signal transduction pathways involving p38 MAPK, JNK, NF kappa B and AP-1 influences the response of chondrocytes cultured in agarose constructs to IL-1 beta and dynamic compression. Chowdhury TT, Salter DM, Bader DL and Lee DA. *Inflamm Res vol. 57, (7) 306-313.* 

**Dynamic compression counteracts IL-1beta induced inducible nitric oxide synthase and cyclo-oxygenase-2 expression in chondrocyte/agarose constructs.** Chowdhury TT, Arghandawi S, Brand J, Akanji OO, Bader DL, Salter DM and Lee DA. *Arthritis Res Ther vol. 10, (2).* 

**Dynamic compression influences interleukin-1 beta-induced nitric oxide and prostaglandin E-2 release by articular chondrocytes via alterations in iNOS and COX-2 expression.** Chowdhury TT, Akanji OO, Salter DM, Bader DL and Lee DA. *Biorheology vol. 45, (3-4) 257-274.* 

## 2007

**52 REAL-TIME PCR USING MOLECULAR BEACONS TO DETECT INOS AND COX-2 EXPRESSION IN CHONDROCYTE/AGAROSE CONSTRUCTS SUBJECTED TO IL-1 AND DYNAMIC COMPRESSION.** Chowdhury TT, Akanji OO, Arghandawi S, Salter DM, Bader DL and Lee DA. *Osteoarthritis and Cartilage vol. 15, c42-c43.Elsevier.* 

**Loading alters actin dynamics and up-regulates cofilin gene expression in chondrocytes.** Campbell JJ, Blain EJ, Chowdhury TT and Knight MM. *Biochemical and Biophysical Research Communications vol. 361*, (2) *329-334*.

## 2006

# Purinergic pathway suppresses the release of NO and stimulates proteoglycan synthesis in chondrocyte/agarose constructs subjected to dynamic compression.

Chowdhury TT and Knight MM. Journal of Cellular Physiology vol. 209, (3) 845-853.

**Integrin-mediated mechanotransduction in IL-1 beta stimulated chondrocytes.** Chowdhury TT, Appleby RN, Salter DM, Bader DA and Lee DA. *Biomech Model Mechanobiol vol. 5, (2-3) 192-201.* 

Anti-inflammatory effects of IL-4 and dynamic compression in IL-1beta stimulated chondrocytes. Chowdhury TT, Bader DL and Lee DA. *Biochem Biophys Res Commun vol. 339*, (1) 241-247.

# Dynamic compression counteracts IL-1beta induced iNOS and COX-2 activity by human chondrocytes cultured in agarose constructs.

Chowdhury TT, Bader DL and Lee DA. Biorheology vol. 43, (3,4) 413-429.

# P140 DYNAMIC COMPRESSION COUNTERACTS FIBRONECTIN FRAGMENT INDUCED UPREGULATION OF NITRIC OXIDE.

Chowdhury TT, Raveenthiran SP, Bader DL and Lee DA. Osteoarthritis and Cartilage vol. 14, Elsevier.

## 2005

# British Society for Matrix Biology Autumn Meeting Joint with the UK Tissue & Cell Engineering Society, University of Bristol, UK.

. International Journal of Experimental Pathology vol. 86, (3) a1-a56. Wiley.

## 2004

**Integrin-mediated mechanotransduction processes in TGFbeta-stimulated monolayer-expanded chondrocytes.** Chowdhury TT, Salter DM, Bader DL and Lee DA. *Biochem Biophys Res Commun vol. 318, (4) 873-881.* 

Crosslinking density influences chondrocyte metabolism in dynamically loaded photocrosslinked poly(ethylene glycol) hydrogels.

Bryant SJ, Chowdhury TT, Lee DA, Bader DL and Anseth KS. Ann Biomed Eng vol. 32, (3) 407-417.

## 2003

**Temporal regulation of chondrocyte metabolism in agarose constructs subjected to dynamic compression.** Chowdhury TT, Bader DL, Shelton JC and Lee DA. *Arch Biochem Biophys vol. 417, (1) 105-111.* 

Dynamic compression counteracts IL-1 beta-induced release of nitric oxide and PGE2 by superficial zone chondrocytes cultured in agarose constructs.

Chowdhury TT, Bader DL and Lee DA. Osteoarthritis Cartilage vol. 11, (9) 688-696.

### 2001

Dynamic compression inhibits the synthesis of nitric oxide and PGE(2) by IL-1beta-stimulated chondrocytes cultured in agarose constructs.

Chowdhury TT, Bader DL and Lee DA. Biochem Biophys Res Commun vol. 285, (5) 1168-1174.