

Evaluation of scaffold microstructure and comparison of cell seeding methods using micro-computed tomography-based tools

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Research output: Contribution to journal › Article › Scientific › peer-review

Cell adhesion and culture medium dependent changes in the high frequency mechanical vibration induced proliferation, osteogenesis, and intracellular organization of human adipose stem cells

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Research output: Contribution to journal › Article › Scientific › peer-review

Backscattering-based wireless communication and power transfer to small biomedical implants

Ukkonen, L., Sydänheimo, L., Ma, S. & Björninen, T., 2020, *Microfluidics, BioMEMS, and Medical Microsystems XVIII*. Gray, B. L. & Becker, H. (eds.). SPIE, 112350A. (Progress in Biomedical Optics and Imaging - Proceedings of SPIE; vol. 11235).

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Co-culture of human induced pluripotent stem cell-derived retinal pigment epithelial cells and endothelial cells on double collagen-coated honeycomb films

Rebelo Calejo, T., Vuorenperä, H., Vuorimaa-Laukkanen, E., Kallio, P., Aalto-Setälä, K., Miettinen, S., Skottman, H., Kellomäki, M. & Juuti-Uusitalo, K., 2020, In : Acta Biomaterialia. 101, p. 327-343 17 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Toward Rigorous Materials Production: New Approach Methodologies Have Extensive Potential to Improve Current Safety Assessment Practices

Nymark, P., Bakker, M., Dekkers, S., Franken, R., Fransman, W., García-Bilbao, A., Greco, D., Gulumian, M., Hadrup, N., Halappanavar, S., Hongisto, V., Hougaard, K. S., Jensen, K. A., Kohonen, P., Koivisto, A. J., Dal Maso, M., Oosterwijk, T., Poikkimäki, M., Rodriguez-Llopis, I., Stierum, R., Sørlø, J. B. & Grafström, R., 2020, In : Small. 16, 6, 13 p., 1904749.

Research output: Contribution to journal › Review Article › Scientific › peer-review

Transcription closed and open complex formation coordinate expression of genes with a shared promoter region

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Research output: Contribution to journal › Article › Scientific › peer-review

Miniature CoCr laser welds under cyclic shear: Fatigue evolution and crack growth

Kanerva, M., Besharat, Z., Pärnänen, T., Jokinen, J., Honkanen, M., Sarlin, E., Göthelid, M. & Schlenzka, D., 1 Nov 2019, In : Journal of the Mechanical Behavior of Biomedical Materials. 99, p. 93-103 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Effect of melt-derived bioactive glass particles on the properties of chitosan scaffolds

Faqhiri, H., Hannula, M., Kellomäki, M., Calejo, M. T. & Massera, J., 1 Sep 2019, In : JOURNAL OF FUNCTIONAL BIOMATERIALS. 10, 3, 38.

Research output: Contribution to journal › Article › Scientific › peer-review

Bioactive glass ions for in vitro osteogenesis and microvascularization in gellan gum-collagen hydrogels

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Research output: Contribution to journal › Article › Scientific › peer-review

Characterisation and in vitro and in vivo evaluation of supercritical-CO₂-foamed β -TCP/PLCL composites for bone applications

Pitkänen, S., Paakinaho, K., Pihlman, H., Ahola, N., Hannula, M., Asikainen, S., Manninen, M., Morelius, M., Keränen, P., Hyttinen, J., Kellomäki, M., Laitinen-Vapaavuori, O. & Miettinen, S., 5 Aug 2019, In : European cells & materials. 38, p. 35-50 16 p.

Research output: Contribution to journal › Article › Scientific › peer-review

3D Scaffolds of Polycaprolactone/Copper-Doped Bioactive Glass: Architecture Engineering with Additive Manufacturing and Cellular Assessments in a Coculture of Bone Marrow Stem Cells and Endothelial Cells

Wang, X., Molino, B. Z., Pitkänen, S., Ojansivu, M., Xu, C., Hannula, M., Hyttinen, J., Miettinen, S., Hupa, L. & Wallace, G., 18 Jul 2019, In : ACS Biomaterials Science and Engineering. 5, 9, p. 4496-4510

Research output: Contribution to journal > Article > Scientific > peer-review

An architectural understanding of natural sway frequencies in trees

Jackson, T., Shenkin, A., Moore, J., Bunce, A., van Emmerik, T., Kane, B., Burcham, D., James, K., Selker, J., Calders, K., Origo, N., Disney, M., Burt, A., Wilkes, P., Raunonen, P., Gonzalez de Tanago Menaca, J., Lau, A., Herold, M., Goodman, R. C., Fourcaud, T. & Malhi, Y., 28 Jun 2019, In : Journal of the Royal Society. Interface. 16, 155, 1 p.

Research output: Contribution to journal > Article > Scientific > peer-review

The Role of Temperature and Lipid Charge on Intake/Uptake of Cationic Gold Nanoparticles into Lipid Bilayers

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Research output: Contribution to journal > Article > Scientific > peer-review

Noise measurements from reconstructed digital breast tomosynthesis

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Solvent Welding and Imprinting Cellulose Nanofiber Films Using Ionic Liquids

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Research output: Contribution to journal > Article > Scientific > peer-review

Gas-foamed poly(lactide-co-glycolide) and poly(lactide-co-glycolide) with bioactive glass fibres demonstrate insufficient bone repair in lapine osteochondral defects

Salonius, E., Muhonen, V., Lehto, K., Järvinen, E., Pyhältö, T., Hannula, M., Aula, A. S., Uppstu, P., Haaparanta, A. M., Rosling, A., Kellomäki, M. & Kiviranta, I., 2019, In : Journal of Tissue Engineering and Regenerative Medicine. 13, 3, p. 406-415 10 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Human Neural Tissues from Neural Stem Cells Using Conductive Biogel and Printed Polymer Microelectrode Arrays for 3D Electrical Stimulation

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Research output: Contribution to journal > Article > Scientific > peer-review

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Research output: Contribution to journal > Article > Scientific > peer-review

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Research output: Contribution to journal > Review Article > Scientific > peer-review

On the limit of superhydrophobicity: Defining the minimum amount of TiO₂ nanoparticle coating

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Research output: Contribution to journal > Article > Scientific > peer-review

Structure and Dynamics of Thermosensitive pDNA Polyplexes Studied by Time-Resolved Fluorescence Spectroscopy
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Research output: Contribution to journal › Article › Scientific › peer-review

Cell response to round and star-shaped polylactide fibers

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Research output: Other conference contribution › Paper, poster or abstract › Scientific

Novel osteoconductive β -tricalcium phosphate/poly(L-lactide-co- ϵ -caprolactone) scaffold for bone regeneration: a study in a rabbit calvarial defect

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Research output: Contribution to journal › Article › Scientific › peer-review

A COMPARATIVE IN VITRO STUDY OF CELL GROWTH ON TEXTILE SCAFFOLDS FOR TISSUE ENGINEERING APPLICATIONS

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Research output: Other conference contribution › Paper, poster or abstract › Scientific

Wound healing of human embryonic stem cell-derived retinal pigment epithelial cells is affected by maturation stage

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Research output: Contribution to journal › Article › Scientific › peer-review

Fluid flow simulations meet high-speed video: Computer vision comparison of droplet dynamics

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Contribution to journal › Article › Scientific › peer-review

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Bioactive glass induced osteogenic differentiation of human adipose stem cells is dependent on cell attachment mechanism and mitogen-activated protein kinases

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Other conference contribution › Paper, poster or abstract › Scientific

The effect of equiaxial stretching on the osteogenic differentiation and mechanical properties of human adipose stem cells

Virjula, S., Zhao, F., Leivo, J., Vanhatupa, S., Kreutzer, J., Vaughan, T. J., Honkala, A. M., Viehrig, M., Mullen, C. A., Kallio, P., McNamara, L. M. & Miettinen, S., 1 Aug 2017, In : *Journal of the Mechanical Behavior of Biomedical Materials*. 72, p. 38-48 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The production of injectable hydrazone crosslinked gellan gum-hyaluronan-hydrogels with tunable mechanical and physical properties

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Research output: Contribution to journal › Article › Scientific › peer-review

Influence of strain rate, temperature and fatigue on the radial compression behaviour of Norway spruce

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Contribution to journal › Article › Scientific › peer-review

Aligned Poly(ϵ -caprolactone) Nanofibers Guide the Orientation and Migration of Human Pluripotent Stem Cell-Derived Neurons, Astrocytes, and Oligodendrocyte Precursor Cells In Vitro

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Other conference contribution › Paper, poster or abstract › Scientific

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Research output: Contribution to journal › Article › Scientific › peer-review

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Research output: Contribution to journal > Article > Scientific > peer-review

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Research output: Contribution to journal > Article > Scientific > peer-review

The influence of high-temperature sulfuric acid solution ageing on the properties of laminated vinyl-ester joints

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Research output: Contribution to journal > Article > Scientific > peer-review

Effect of incorporation of CdS NPs on performance of PTB7: PCBM organic solar cells

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Research output: Contribution to journal > Article > Scientific > peer-review

Wetting hysteresis induced by temperature changes: Supercooled water on hydrophobic surfaces

Heydari, G., Sedighi Moghaddam, M., Tuominen, M., Fielden, M., Haapanen, J., Mäkelä, J. M. & Claesson, P. M., 15 Apr 2016, In : *Journal of Colloid and Interface Science*. 468, p. 21-33 13 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Human Adipose Stem Cells Differentiated on Braided Polylactide Scaffolds is a Potential Approach for Tendon Tissue Engineering

Vuornos, K., Björninen, M., Talvitie, E., Paakinaho, K., Kellomäki, M., Huhtala, H., Miettinen, S., Seppänen-Kajjansinkko, R. & Haimi, S., 1 Mar 2016, In : *Tissue Engineering Part A*. 22, 5-6, p. 513-523 11 p.

Research output: Contribution to journal > Article > Scientific > peer-review

Compatibilization of natural rubber/nitrile rubber blends by sol-gel nano-silica generated by in situ method

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Research output: Contribution to journal > Article > Scientific > peer-review

Improved properties for packaging materials by nanoscale surface modification and ALD barrier coating

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

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Research output: Contribution to journal > Article > Scientific > peer-review

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Research output: Contribution to journal > Article > Scientific > peer-review

Polypyrrole coating on poly-(lactide/glycolide)- β -tricalcium phosphate screws enhances new bone formation in rabbits

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Research output: Contribution to journal > Article > Scientific > peer-review

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Research output: Contribution to journal › Article › Scientific › peer-review

Surface Modified Biodegradable Electrospun Membranes as a Carrier for Human Embryonic Stem Cell-Derived Retinal Pigment Epithelial Cells

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Research output: Contribution to journal › Article › Scientific › peer-review

Sol-gel synthesis of quaternary (P₂O₅)₅₅-(CaO)₂₅-(Na₂O)_(20-x)-(TiO₂)_x bioresorbable glasses for bone tissue engineering applications (x = 0, 5, 10, or 15)

Foroutan, F., Walters, N. J., Owens, G. J., Mordan, N. J., Kim, H. W., de Leeuw, N. H. & Knowles, J. C., 1 Aug 2015, In : Biomedical materials (Bristol, England). 10, 4, p. 45025 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Bioactive glass ions as strong enhancers of osteogenic differentiation in human adipose stem cells

Ojansivu, M., Vanhatupa, S., Björkvik, L., Häkkänen, H., Kellomäki, M., Autio, R., Ihalainen, J. A., Hupa, L. & Miettinen, S., 15 Jul 2015, In : Acta Biomaterialia. 21, p. 190-203 14 p.

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Measuring optical anisotropy in poly(3,4-ethylene dioxithiophene): poly(styrene sulfonate) films with added graphene

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Research output: Contribution to journal › Article › Scientific › peer-review

The influence of SrO and CaO in silicate and phosphate bioactive glasses on human gingival fibroblasts

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Research output: Contribution to journal › Article › Scientific › peer-review

Dynamic piezoelectric stimulation enhances osteogenic differentiation of human adipose stem cells

Ribeiro, C., Pärssinen, J., Sencadas, V., Correia, V., Miettinen, S., Hytönen, V. P. & Lanceros-Méndez, S., 1 Jun 2015, In : Journal of Biomedical Materials Research. Part A. 103, 6, p. 2172-2175 4 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Soft graphoepitaxy for large area directed self-assembly of polystyrene-block-poly(dimethylsiloxane) block copolymer on nanopatterned poss substrates fabricated by nanoimprint lithography

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Research output: Contribution to journal › Article › Scientific › peer-review

Biomimetic collagen I and IV double layer Langmuir-Schaefer films as microenvironment for human pluripotent stem cell derived retinal pigment epithelial cells

Sorkio, A. E., Vuorimaa-Laukkanen, E. P., Hakola, H. M., Liang, H., Ujula, T. A., Valle-Delgado, J. J., Österberg, M., Yliperttula, M. L. & Skottman, H., 1 May 2015, In : Biomaterials. 51, p. 257-269 13 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Comparison of three light doses in the photodynamic treatment of actinic keratosis using mathematical modeling

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Research output: Contribution to journal > Article > Scientific > peer-review

Enhancement of adhesion and promotion of osteogenic differentiation of human adipose stem cells by poled electroactive poly(vinylidene fluoride)

Parssinen, J., Hammarén, H., Rahikainen, R., Sencadas, V., Ribeiro, C., Vanhatupa, S., Miettinen, S., Lancers-Méndez, S. & Hytönen, V. P., 1 Mar 2015, In : *Journal of Biomedical Materials Research. Part A.* 103, 3, p. 919-928 10 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Rational design of a printable, highly conductive silicone-based electrically conductive adhesive for stretchable radio-frequency antennas

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Research output: Contribution to journal > Article > Scientific > peer-review

Effects of chitosan and bioactive glass modifications of knitted and rolled polylactide-based 96/4L/D scaffolds on chondrogenic differentiation of adipose stem cells

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Research output: Contribution to journal > Article > Scientific > peer-review

Interstitial photodynamic therapy and glioblastoma: Light fractionation study on a preclinical model: Preliminary results

Leroy, H. A., Vermandel, M., Tétard, M. C., Lejeune, J. P., Mordon, S. & Reyns, N., 2015, *Optical Techniques in Neurosurgery, Neurophotonics, and Optogenetics II.* SPIE, Vol. 9305. 93050D
Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

Stimuli-Responsive Materials Based on Interpenetrating Polymer Liquid Crystal Hydrogels

Stumpel, J. E., Gil, E. R., Spoelstra, A. B., Bastiaansen, C. W. M., Broer, D. J. & Schenning, A. P. H. J., 2015, In : *Advanced Functional Materials.* 25, 22, p. 3314-3320
Research output: Contribution to journal > Article > Scientific > peer-review

Osteointegration of PLGA implants with nanostructured or micro-sized β -TCP particles in a minipig model

Kulkova, J., Moritz, N., Suokas, E. O., Strandberg, N., Leino, K. A., Laitio, T. T. & Aro, H. T., 1 Dec 2014, In : *Journal of the Mechanical Behavior of Biomedical Materials.* 40, p. 190-200 11 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Structure and barrier properties of human embryonic stem cell-derived retinal pigment epithelial cells are affected by extracellular matrix protein coating

Sorkio, A., Hongisto, H., Kaarniranta, K., Uusitalo, H., Juuti-Uusitalo, K. & Skottman, H., 1 Feb 2014, In : *Tissue Engineering Part A.* 20, 3-4, p. 622-634 13 p.
Research output: Contribution to journal > Article > Scientific > peer-review

A 3D Alzheimer's disease culture model and the induction of P21-activated kinase mediated sensing in iPSC derived neurons

Zhang, D., Pekkanen-Mattila, M., Shahsavani, M., Falk, A., Teixeira, A. I. & Herland, A., Feb 2014, In : *Biomaterials.* 35, 5, p. 1420-1428 9 p.
Research output: Contribution to journal > Article > Scientific > peer-review

Direct laser writing of microstructures for the growth guidance of human pluripotent stem cell derived neuronal cells

Turunen, S., Käpylä, E., Lähteenmäki, M., Ylä-Outinen, L., Narkilahti, S. & Kellomäki, M., 2014, In : *Optics and Lasers in Engineering.* 55, p. 197-204 8 p.
Research output: Contribution to journal > Article > Scientific > peer-review

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Ylä-Outinen, L., Joki, T., Varjola, M., Skottman, H. & Narkilahti, S., 2014, In : *Journal of Tissue Engineering and Regenerative Medicine.* 8, 3, p. 186-194 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

The sensitivity of random polymer brush-lamellar polystyrene-b-polymethylmethacrylate block copolymer systems to process conditions

Borah, D., Rasappa, S., SenthamaraiKannan, R., Shaw, M. T., Holmes, J. D. & Morris, M. A., 1 Mar 2013, In : Journal of Colloid and Interface Science. 393, 1, p. 192-202 11 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Hollow fibers of poly(lactide-co-glycolide) and poly(ϵ -caprolactone) blends for vascular tissue engineering applications

Diban, N., Haimi, S., Bolhuis-Versteeg, L., Teixeira, S., Miettinen, S., Poot, A., Grijpma, D. & Stamatialis, D., 2013, In : Acta Biomaterialia. 9, 5, p. 6450-6458 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Roll-to-roll atomic layer deposition for flexible substrates

Lahtinen, K., Maydannik, P., Kääriäinen, T., Seppänen, T., Cameron, D. C., Johansson, P., Kraft, M. & Kuusipalo, J., 2013, *TAPPI International Conference on Nanotechnology 2013*. TAPPI Press, p. 726-739 14 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Wear resistance of nanoparticle coatings on paperboard

Stepien, M., Chinga-Carrasco, G., Saarinen, J. J., Teisala, H., Tuominen, M., Aromaa, M., Haapanen, J., Kuusipalo, J., Mäkelä, J. M. & Toivakka, M., 2013, *TAPPI International Conference on Nanotechnology 2013*. TAPPI Press, p. 821-829 9 p.

Research output: Chapter in Book/Report/Conference proceeding › Conference contribution › Scientific › peer-review

Effect of sol-gel derived in situ silica on the morphology and mechanical behavior of natural rubber and acrylonitrile butadiene rubber blends

Kapgate, B. P., Das, C., Das, A., Basu, D., Reuter, U. & Heinrich, G., Sep 2012, In : JOURNAL OF SOL-GEL SCIENCE AND TECHNOLOGY. 63, 3, p. 501-509 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Mathematical modelling of the action potential of human embryonic stem cell derived cardiomyocytes

Paci, M., Sartiani, L., Del Lungo, M., Jaconi, M., Mugelli, A., Cerbai, E. & Severi, S., 28 Aug 2012, In : BioMedical Engineering Online. 11, 61.

Research output: Contribution to journal › Article › Scientific › peer-review

Halogen bonding versus hydrogen bonding in driving self-assembly and performance of light-responsive supramolecular polymers

Priimagi, A., Cavallo, G., Forni, A., Gorynsztejn-Leben, M., Kaivola, M., Metrangolo, P., Milani, R., Shishido, A., Pilati, T., Resnati, G. & Terraneo, G., 20 Jun 2012, In : Advanced Functional Materials. 22, 12, p. 2572-2579 8 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Demonstration of increased lipid accumulation potential of stigeoclonium sp., Kütz. BUM11007 under nitrogen starved regime: A new source of lipids for biodiesel production

Praveenkumar, R., Johncy, K., MubarakAli, D., Vijayan, D., Thajuddin, N. & Gunasekaran, M., Apr 2012, In : Journal of Biobased Materials and Bioenergy. 6, 2, p. 209-213 5 p.

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Research output: Contribution to journal › Article › Scientific › peer-review

Human adipose tissue extract induces angiogenesis and adipogenesis in vitro

Sarkanen, J. R., Kaila, V., Mannerström, B., Rätty, S., Kuokkanen, H., Miettinen, S. & Ylikomi, T., 1 Jan 2012, In : Tissue Engineering Part A. 18, 1-2, p. 17-25 9 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Effects of bioactive glass S53P4 or beta-tricalcium phosphate and bone morphogenetic protein-2 and bone morphogenetic protein-7 on osteogenic differentiation of human adipose stem cells

Waselau, M., Patrikoski, M., Juntunen, M., Kujala, K., Kääriäinen, M., Kuokkanen, H., Sándor, G. K., Vapaavuori, O., Suuronen, R., Mannerström, B., von Rechenberg, B. & Miettinen, S., 2012, In : *Journal of Tissue Engineering*. 3, 1, p. 1-14 14 p.

Research output: Contribution to journal > Article > Scientific > peer-review

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Hybrid nanoparticle design based on cationized gelatin and the polyanions dextran sulfate and chondroitin sulfate for ocular gene therapy

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Research output: Contribution to journal > Article > Scientific > peer-review

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Analysis of biomaterial scaffold fiber thickness for assessing cell attachment

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Research output: Chapter in Book/Report/Conference proceeding > Conference contribution > Scientific > peer-review

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Kanninen, L., Jokinen, N., Lahtonen, K., Jussila, P., Ali-Löytty, H., Hirsimäki, M., Leppiniemi, J., Hytönen, V., Kulomaa, M., Ahola, N., Paakinaho, K., Kellomäki, M. & Valden, M., 1 Jan 2010, In : *European Cells and Materials*. 20, SUPPL. 3, p. 133 1 p.

Research output: Contribution to journal › Article › Scientific › peer-review

Photostable second-harmonic generation from a single KTiOPO₄ nanocrystal for nonlinear microscopy

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Research output: Contribution to journal › Article › Scientific › peer-review