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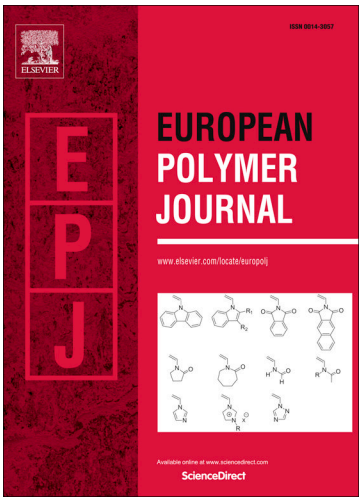

Biocompatible and electroconductive polyaniline-based biomaterials for electrical stimulation

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Biocompatible and electroconductive polyaniline-based biomaterials for electrical stimulation [1]

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Short running title: PANI-based biomaterials for electrical stimulation

[1] *Abbreviations:* aECM, artificial extracellular matrix; AFM, atomic force microscopy; ALP, alkaline phosphatase; APS, ammonium persulfate; [BMIM][BF_4], 1-butyl-3-methylimidazolium tetrafluoroborate; [BMIM][NTf_2], 1-butyl-3-methylimidazolium *bis*(trifluoromethylsulfonyl)imide; [BMIM][PF_6], 1-Butyl-3-methylimidazolium hexafluorophosphate; BMSCs, bone marrow stromal cells; CHO, Chinese hamster ovary; CNC, computer numerical control; Coll1, collagen type 1; Coll1A1, collagen type 1, α1; CSA, camphorsulfonic acid; CS-G/PANI, chitosan-modified graphene/polyanilie; cTnT, α-actin and cardiac troponin T; CVD-iPSCs, cardiovascular disease-specific induced pluripotent stem cells; DBSA, dodecylbenzenesulfonic acid; DMF, dimethylformamide; DMSO, dimethylsulfoxide; ECM, extracellular matrix; EM, emeraldine base; [EMIM][ES], 1-Ethyl-3-methylimidazolium ethyl sulfate, EmS, emeraldine salt; ES, electrical stimulation; EVAc, ethylene-vinyl acetate; HA, hydroxyapatite; HaCaT, human keratinocyte cells; HEC/PANI, 2-hydroxyethylcellulose/polyaniline; HepG2, human hepatocellular carcinoma cell; hESCs, human embryonic stem cells; [HMIM][FAP], 1-Hexyl-3-methylimidazolium tris (pentafluoroethyl)trifluorophosphate; hMSCs, human mesenchymal stem cells; HOSCs, human osteosarcoma cells; HUVECs, human umbilical vein endothelial cells; IEPs, inherently electroconductive polymers; IFP, interstitial fluid pressure; ITO, indium tin oxide; LM, leucoemeraldine base; NA, nigraniline; NGF, nerve growth factor; NLOs, non-linear optics; NMP, N-methyl-2-pyrrolidone; NSA, naphtalenesulfonic acid; OCN, osteocalcin; OPN, osteopontin; PA, polyacetylene; ; PABA, poly (aniline-co-benzoic acid); PAMPSA, poly (2-acrylamido-2-methyl-1-propanesulfonic acid); PAN, polyacrylonitrile; PANI, Polyaniline; PANI/PES, polyaniline/ plyethersulfone; PANI-B, PANI base; PANI-Cys, polyaniline-cysteine; PANI-H, HCl doped PANI; PC12, pheochromocytoma 12; PCL, poly-ε-caprolactone; PDMS, polydimethylsiloxane; PE, polyethylene; PEDOT, poly (3, 4-dioxythiophene); PEDs, photo-emitting diodes; PEF, pulsed electrical field; PGLDs, polyglycerol dendrimers; PGS, Poly(glycerol-sebacate); PHBV, poly (3-hydroxybutyrate-*co*-3-hydroxyvalerate); PLA, poly lactic acid; Plexiglas, polymethylmethaacrylate; PLLA/PANI, poly-L-lactide/Polyaniline; PN, pernigraniline base; POSS, poly (styrene sulfonate); PMAP, poly(2-methoxyaniline-5-phosphonic acid); PPy,polypyrrole; PS, polystyrene; PSK, poly (L-lactic acid-co-ε-caprolactone)/silk fibroin; PT, polythiophene; PTFE, polytetraflouroethylene; PTSA, ρ-toluenesulfonic acid; PVA, Polyvinyl alcohol; RBCs, red blood cells; RMR, rapid-mixing reaction; RUNX2, Runt-related transcription factor 2; SEM, scanning electron microscope; sHya, sulfated hyaluronan; TCP, tissue culture plate; XPS, X-ray photoelectron spectroscopy.