

Content

Toxicity of nanoparticles	3
Modelling of Nanomaterials Toxicity by the Means of Relational Machine Learning	4
Whole-genome Expression Analysis in THP-1 Macrophage-like Cells Exposed to Diverse Nanomaterials	9
Polydispersity Index in the Cell Medium and Crystalline Size Affect Toxicity of TiO ₂ Nanomaterial in THP-1 Cell Line	15
Cytotoxicity of Organic Compounds Bound to Ambient Air Particles from Various Sampling Sites	22
Surface Modification of Metal-based Nanoparticles	28
Nanostructures and tissue engineering	33
Polymeric Nanofibers Prepared Via Electrospinning	34
Melanocytes and Pigmentation in Tissue Engineering	40
Plasma Surface Modification of Electrospun Nanofibres for Tissue Engineering	45
Bone Tissue Engineering – Basic, Principles, Materials	51
Osteoblast Differentiation and Maturation	56
Mesenchymal Stem Cells and Their Trans-differentiation in Repair of Specific Tissues	61
Extracellular Matrix Scaffolds in Tissue Engineering Applications	68
Nanotechnology and biomedical research	75
Treatment of Ocular Surface Inflammation	76
Differentiation and Neurotrophic Potential of Mesenchymal Stem Cells for Treatment of Retinal Disorders	81
Carriers of Stem Cells for Ocular Surface Reconstruction: Advantages of Nanofiber Scaffolds	86
Pathophysiology of Amyotrophic Lateral Sclerosis	90
Comparison of Phenotype and Secretory Functions of Mesenchymal Stem Cells Isolated from Patients Suffering from Amyotrophic Lateral Sclerosis and Healthy Donors	96
Immunosuppressive Effects of Mesenchymal Stem Cells Applied on Nanofiber Scaffolds in Combination with a Local Immunosuppression in a Model of Skin Transplantation	101
The Therapeutic Potential of Light on Spinal Cord Injury	106
Glutamate Excitotoxicity in Spinal Cord Injury	110
Nuclear Factor – kappa B Pathway in Central Nervous System	117
Study of Synergistic Effect of Mesenchymal Stem Cells and Immunosuppressive Drugs on an Inflammatory Response in an In Vitro Model	124
Mesenchymal Stem Cells and Production of the Immunoregulatory Molecules	129
Opioids, the Immune System and Stem Cells	134
Overcoming Problems with Non-normal Distribution and Small Number of Replicates: Implementation of the Bootstrapping Method in Biomedical Research	138