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| Neuroscience  a) Cellular and molecular neuroscience   1. Neural development   b) Neurotoxicology and Neurotoxicity   1. Toxic effects of metal base nanoparticles 2. Toxic effects of heavy metals 3. Toxic effects of pesticides and herbicides 4. Toxic effects of drugs 5. Toxic effects of toxins   c) Neuropharmacology   1. Protective and pharmaceutical effects of natural herbs and extracts 2. Nano medicine   d) Experimental neurological and neurodegenerative diseases   1. Parkinson's disease 2. Alzheimer's disease 3. Huntington's disease 4. Neuro-oncology 5. Epilepsy 6. Ischemia 7. Psychiatric disorders 8. Trauma 9. Peripheral nerve disease 10. CNS autoimmune diseases 11. Autism   e) Brain aging   1. Neurobiology of brain aging   II. Tissue engineering  a) Bone tissue engineering using glass and glass ceramics  b) Bioceramics-based scaffolds for hard tissue regeneration  c) Biocomposite scaffolds for bone tissue engineering  d) Skin regeneration using bioactive glasses  e) Acellular matrixes for soft tissue healing  f) Nanofibrous scaffold for skin wound healing  g) Cardiac tissue regeneration using nanofibrous scaffolds  h) Utilizing adult stem cells for tissue engineering  III. Reproductive biology  a) Female infertility   1. PCOS model and treatments 2. Endometriosis model and treatments 3. Premature ovarian failures (POF) treatments 4. Improvement the ovarian tissue preservation process 5. Improvement the oocyte preservation process 6. Oocyte and follicles in vitro maturation (IVM) 7. Investigation of environmental factors causing female   infertility   1. Evaluation the maternal (genetic, immunologic and etc) factors   in recurrent implantation failure(RIF)   1. Stem cell therapy 2. Ovarian tissue culture   b) Male infertility   1. Azoospermia models and treatments 2. Evaluation the different methods for sperm preparation to ART 3. Improvement the sperm freezing process 4. Testes tissue preservation 5. Investigation of environmental factors causing male infertility 6. In vitro differentiation of stem cells into gametes 7. Engineered reproductive tissues   c) Embryology   1. Optimum condition for invitro fertilization(IVF) 2. Embryo Co-culture 3. Genetic disorders in IVF embryos (embryo biopsy) 4. Improve the embryo freezing process 5. Evaluation the embryo factors in recurrent implantation failure (RIF) 6. Setup the new methods and technology to embryo grading 7. Utilize the new technology for IVM and IVF 8. Gene editing in early stage of embryo growth 9. Teratology and congenital disorders |