# Makarand V Risbud

## List of Publications by Citations



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| 137 papers | 10,004 citations | 49 h-index | 98 g-index |
| 144 ext. papers | 11,317 ext. citations | 5.8 avg, IF | 6.45 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 137 | Chitosan: a versatile biopolymer for orthopaedic tissue-engineering. *Biomaterials*, **2005**, 26, 5983-90 | 15.6 | 1311 |
| 136 | Scaffold-based tissue engineering: rationale for computer-aided design and solid free-form fabrication systems. *Trends in Biotechnology*, **2004**, 22, 354-62 | 15.1 | 888 |
| 135 | Role of cytokines in intervertebral disc degeneration: pain and disc content. *Nature Reviews Rheumatology*, **2014**, 10, 44-56 | 8.1 | 734 |
| 134 | pH-sensitive freeze-dried chitosan-polyvinyl pyrrolidone hydrogels as controlled release system for antibiotic delivery. *Journal of Controlled Release*, **2000**, 68, 23-30 | 11.7 | 385 |
| 133 | Exhaustion of nucleus pulposus progenitor cells with ageing and degeneration of the intervertebral disc. *Nature Communications*, **2012**, 3, 1264 | 17.4 | 267 |
| 132 | Differentiation of mesenchymal stem cells towards a nucleus pulposus-like phenotype in vitro: implications for cell-based transplantation therapy. *Spine*, **2004**, 29, 2627-32 | 3.3 | 251 |
| 131 | Evidence for skeletal progenitor cells in the degenerate human intervertebral disc. *Spine*, **2007**, 32, 2537-44 | 3.5 | 215 |
| 130 | Tissue engineering: advances in in vitro cartilage generation. *Trends in Biotechnology*, **2002**, 20, 351-6 | 15.1 | 208 |
| 129 | Nucleus pulposus cells express HIF-1 alpha under normoxic culture conditions: a metabolic adaptation to the intervertebral disc microenvironment. *Journal of Cellular Biochemistry*, **2006**, 98, 152-9 | 4.7 | 200 |
| 128 | Molecular mechanisms of biological aging in intervertebral discs. *Journal of Orthopaedic Research*, **2016**, 34, 1289-306 | 3.8 | 195 |
| 127 | TNF-□and IL-1□promote a disintegrin-like and metalloprotease with thrombospondin type I motif-5-mediated aggrecan degradation through syndecan-4 in intervertebral disc. *Journal of Biological Chemistry*, **2011**, 286, 39738-49 | 5.4 | 177 |
| 126 | Defining the phenotype of young healthy nucleus pulposus cells: recommendations of the Spine Research Interest Group at the 2014 annual ORS meeting. *Journal of Orthopaedic Research*, **2015**, 33, 283-93 | 3.8 | 169 |
| 125 | Current strategies for cell delivery in cartilage and bone regeneration. *Current Opinion in Biotechnology*, **2004**, 15, 411-8 | 11.4 | 147 |
| 124 | Inflammatory cytokines associated with degenerative disc disease control aggrecanase-1 (ADAMTS-4) expression in nucleus pulposus cells through MAPK and NF-B. *American Journal of Pathology*, **2013**, 182, 2310-21 | 5.8 | 138 |
| 123 | Normoxic stabilization of HIF-1alpha drives glycolytic metabolism and regulates aggrecan gene expression in nucleus pulposus cells of the rat intervertebral disk. *American Journal of Physiology - Cell Physiology*, **2007**, 293, C621-31 | 5.4 | 133 |
| 122 | Phenotypic characteristics of the nucleus pulposus: expression of hypoxia inducing factor-1, glucose transporter-1 and MMP-2. *Cell and Tissue Research*, **2002**, 308, 401-7 | 4.2 | 130 |
| 121 | Enhancement of intervertebral disc cell senescence by WNT/□catenin signaling-induced matrix metalloproteinase expression. *Arthritis and Rheumatism*, **2010**, 62, 3036-47 | | 113 |

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| 120 | Notochordal cells in the adult intervertebral disc: new perspective on an old question. *Critical Reviews in Eukaryotic Gene Expression*, **2011**, 21, 29-41 | 1.3 | 112 |
| 119 | Toward an understanding of the role of notochordal cells in the adult intervertebral disc: from discord to accord. *Developmental Dynamics*, **2010**, 239, 2141-8 | 2.9 | 107 |
| 118 | Tumor necrosis factor □and interleukin-1□dependent induction of CCL3 expression by nucleus pulposus cells promotes macrophage migration through CCR1. *Arthritis and Rheumatism*, **2013**, 65, 832-42 | | 105 |
| 117 | Matrix vesicles: Are they anchored exosomes?. *Bone*, **2015**, 79, 29-36 | 4.7 | 103 |
| 116 | Nucleus pulposus cells upregulate PI3K/Akt and MEK/ERK signaling pathways under hypoxic conditions and resist apoptosis induced by serum withdrawal. *Spine*, **2005**, 30, 882-9 | 3.3 | 98 |
| 115 | Tumor necrosis factor-□and interleukin-1□dependent matrix metalloproteinase-3 expression in nucleus pulposus cells requires cooperative signaling via syndecan 4 and mitogen-activated protein kinase-NF-B axis: implications in inflammatory disc disease. *American Journal of Pathology*, **2014**, | 5.8 | 96 |
| 114 | Toward an optimum system for intervertebral disc organ culture: TGF-beta 3 enhances nucleus pulposus and anulus fibrosus survival and function through modulation of TGF-beta-R expression and ERK signaling. *Spine*, **2006**, 31, 884-90 | 3.3 | 86 |
| 113 | MEK/ERK signaling controls osmoregulation of nucleus pulposus cells of the intervertebral disc by transactivation of TonEBP/OREBP. *Journal of Bone and Mineral Research*, **2007**, 22, 965-74 | 6.3 | 84 |
| 112 | Extracellular osmolarity regulates matrix homeostasis in the intervertebral disc and articular cartilage: evolving role of TonEBP. *Matrix Biology*, **2014**, 40, 10-6 | 11.4 | 82 |
| 111 | HIF-1 alpha is a regulator of galectin-3 expression in the intervertebral disc. *Journal of Bone and Mineral Research*, **2007**, 22, 1851-61 | 6.3 | 79 |
| 110 | Hypoxic regulation of nucleus pulposus cell survival: from niche to notch. *American Journal of Pathology*, **2010**, 176, 1577-83 | 5.8 | 78 |
| 109 | TonEBP/OREBP is a regulator of nucleus pulposus cell function and survival in the intervertebral disc. *Journal of Biological Chemistry*, **2006**, 281, 25416-24 | 5.4 | 77 |
| 108 | Inflammatory cytokines induce NOTCH signaling in nucleus pulposus cells: implications in intervertebral disc degeneration. *Journal of Biological Chemistry*, **2013**, 288, 16761-16774 | 5.4 | 75 |
| 107 | Expression and relationship of proinflammatory chemokine RANTES/CCL5 and cytokine IL-1□n painful human intervertebral discs. *Spine*, **2013**, 38, 873-80 | 3.3 | 73 |
| 106 | Hypoxia activates MAPK activity in rat nucleus pulposus cells: regulation of integrin expression and cell survival. *Spine*, **2005**, 30, 2503-9 | 3.3 | 72 |
| 105 | Hypoxia promotes noncanonical autophagy in nucleus pulposus cells independent of MTOR and HIF1A signaling. *Autophagy*, **2016**, 12, 1631-46 | 10.2 | 71 |
| 104 | Hypoxia activates the notch signaling pathway in cells of the intervertebral disc: implications in degenerative disc disease. *Arthritis and Rheumatism*, **2011**, 63, 1355-64 | | 63 |
| 103 | Growth modulation of fibroblasts by chitosan-polyvinyl pyrrolidone hydrogel: implications for wound management?. *Journal of Biosciences*, **2000**, 25, 25-31 | 2.3 | 63 |

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| 102 | Substance P stimulates production of inflammatory cytokines in human disc cells. *Spine*, **2013**, 38, E1291-9 | 3.3 | 62 |
| 101 | Expression of acid-sensing ion channel 3 (ASIC3) in nucleus pulposus cells of the intervertebral disc is regulated by p75NTR and ERK signaling. *Journal of Bone and Mineral Research*, **2007**, 22, 1996-2006 | 6.3 | 62 |
| 100 | Cited2 modulates hypoxia-inducible factor-dependent expression of vascular endothelial growth factor in nucleus pulposus cells of the rat intervertebral disc. *Arthritis and Rheumatism*, **2008**, 58, 3798-808 | | 62 |
| 99 | Loss of HIF-1 in the notochord results in cell death and complete disappearance of the nucleus pulposus. *PLoS ONE*, **2014**, 9, e110768 | 3.7 | 61 |
| 98 | HIF-1 and HIF-2 degradation is differentially regulated in nucleus pulposus cells of the intervertebral disc. *Journal of Bone and Mineral Research*, **2012**, 27, 401-12 | 6.3 | 60 |
| 97 | Prolyl hydroxylase 3 (PHD3) modulates catabolic effects of tumor necrosis factor- (TNF- ) on cells of the nucleus pulposus through co-activation of nuclear factor B (NF-B)/p65 signaling. *Journal of Biological Chemistry*, **2012**, 287, 39942-53 | 5.4 | 58 |
| 96 | Biocompatible hydrogel supports the growth of respiratory epithelial cells: possibilities in tracheal tissue engineering. *Journal of Biomedical Materials Research Part B*, **2001**, 56, 120-7 | | 58 |
| 95 | Expression of prolyl hydroxylases (PHDs) is selectively controlled by HIF-1 and HIF-2 proteins in nucleus pulposus cells of the intervertebral disc: distinct roles of PHD2 and PHD3 proteins in controlling HIF-1 activity in hypoxia. *Journal of Biological Chemistry*, **2012**, 287, 16975-86 | 5.4 | 57 |
| 94 | PI3K/AKT regulates aggrecan gene expression by modulating Sox9 expression and activity in nucleus pulposus cells of the intervertebral disc. *Journal of Cellular Physiology*, **2009**, 221, 668-76 | 7 | 55 |
| 93 | An organ culture system for the study of the nucleus pulposus: description of the system and evaluation of the cells. *Spine*, **2003**, 28, 2652-8; discussion 2658-9 | 3.3 | 54 |
| 92 | Glycosaminoglycan synthesis in the nucleus pulposus: Dysregulation and the pathogenesis of disc degeneration. *Matrix Biology*, **2018**, 71-72, 368-379 | 11.4 | 53 |
| 91 | A novel mouse model of intervertebral disc degeneration shows altered cell fate and matrix homeostasis. *Matrix Biology*, **2018**, 70, 102-122 | 11.4 | 53 |
| 90 | Osteogenic potential of adult human stem cells of the lumbar vertebral body and the iliac crest. *Spine*, **2006**, 31, 83-9 | 3.3 | 52 |
| 89 | Discogenic Back Pain: Literature Review of Definition, Diagnosis, and Treatment. *JBMR Plus*, **2019**, 3, e10180 | 3.9 | 51 |
| 88 | Regulation of CCN2/connective tissue growth factor expression in the nucleus pulposus of the intervertebral disc: role of Smad and activator protein 1 signaling. *Arthritis and Rheumatism*, **2010**, 62, 1983-92 | | 48 |
| 87 | Preparation, characterization and in vitro biocompatibility evaluation of poly(butylene terephthalate)/wollastonite composites. *Biomaterials*, **2001**, 22, 1591-7 | 15.6 | 48 |
| 86 | BMP-2 and TGF-beta stimulate expression of beta1,3-glucuronosyl transferase 1 (GlcAT-1) in nucleus pulposus cells through AP1, TonEBP, and Sp1: role of MAPKs. *Journal of Bone and Mineral Research*, **2010**, 25, 1179-90 | 6.3 | 47 |
| 85 | Stem cell regeneration of the nucleus pulposus. *Spine Journal*, **2004**, 4, 348S-353S | 4 | 47 |

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| 84 | An organ culture system to model early degenerative changes of the intervertebral disc. *Arthritis Research and Therapy*, **2011**, 13, R171 | 5.7 | 46 |
| 83 | Fibroblast growth factor-2 maintains the differentiation potential of nucleus pulposus cells in vitro: implications for cell-based transplantation therapy. *Spine*, **2007**, 32, 495-502 | 3.3 | 46 |
| 82 | Cell-based therapy for disc repair. *Spine Journal*, **2005**, 5, 297S-303S | 4 | 46 |
| 81 | Effect of chitosan-polyvinyl pyrrolidone hydrogel on proliferation and cytokine expression of endothelial cells: implications in islet immunoisolation. *Journal of Biomedical Materials Research Part B*, **2001**, 57, 300-5 | | 46 |
| 80 | CCN2 suppresses catabolic effects of interleukin-1β through α5β1 and αVβ3 integrins in nucleus pulposus cells: implications in intervertebral disc degeneration. *Journal of Biological Chemistry*, **2014**, 289, 7374-87 | 5.4 | 44 |
| 79 | Understanding nucleus pulposus cell phenotype: a prerequisite for stem cell based therapies to treat intervertebral disc degeneration. *Current Stem Cell Research and Therapy*, **2015**, 10, 307-16 | 3.6 | 43 |
| 78 | Activation of TonEBP by calcium controls {beta}1,3-glucuronosyltransferase-I expression, a key regulator of glycosaminoglycan synthesis in cells of the intervertebral disc. *Journal of Biological Chemistry*, **2009**, 284, 9824-34 | 5.4 | 42 |
| 77 | Suitability of cellulose molecular dialysis membrane for bioartificial pancreas: in vitro biocompatibility studies. *Journal of Biomedical Materials Research Part B*, **2001**, 54, 436-44 | | 42 |
| 76 | Tissue engineering: implications in the treatment of organ and tissue defects. *Biogerontology*, **2001**, 2, 117-25 | 4.5 | 40 |
| 75 | Osmolarity and intracellular calcium regulate aquaporin2 expression through TonEBP in nucleus pulposus cells of the intervertebral disc. *Journal of Bone and Mineral Research*, **2009**, 24, 992-1001 | 6.3 | 38 |
| 74 | Cellular therapy for disc degeneration. *Spine*, **2005**, 30, S14-9 | 3.3 | 38 |
| 73 | Models of pancreatic regeneration in diabetes. *Diabetes Research and Clinical Practice*, **2002**, 58, 155-65 | 7.4 | 38 |
| 72 | Tonicity enhancer binding protein (TonEBP) and hypoxia-inducible factor (HIF) coordinate heat shock protein 70 (Hsp70) expression in hypoxic nucleus pulposus cells: role of Hsp70 in HIF-1α degradation. *Journal of Bone and Mineral Research*, **2012**, 27, 1106-17 | 6.3 | 37 |
| 71 | Prolyl-4-hydroxylase domain protein 2 controls NF-κB/p65 transactivation and enhances the catabolic effects of inflammatory cytokines on cells of the nucleus pulposus. *Journal of Biological Chemistry*, **2015**, 290, 7195-207 | 5.4 | 36 |
| 70 | Chitosan-polyvinyl pyrrolidone hydrogels as candidate for islet immunoisolation: in vitro biocompatibility evaluation. *Cell Transplantation*, **2000**, 9, 25-31 | 4 | 36 |
| 69 | p16 deletion in cells of the intervertebral disc affects their matrix homeostasis and senescence associated secretory phenotype without altering onset of senescence. *Matrix Biology*, **2019**, 82, 54-70 | 11.4 | 35 |
| 68 | Hypoxia-inducible factor (HIF)-1α and CCN2 form a regulatory circuit in hypoxic nucleus pulposus cells: CCN2 suppresses HIF-1α level and transcriptional activity. *Journal of Biological Chemistry*, **2013**, 288, 12654-66 | 5.4 | 35 |
| 67 | Hypoxic regulation of β1,3-glucuronyltransferase 1 expression in nucleus pulposus cells of the rat intervertebral disc: role of hypoxia-inducible factor proteins. *Arthritis and Rheumatism*, **2011**, 63, 1950-60 | | 35 |

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| 66 | Reversine enhances generation of progenitor-like cells by dedifferentiation of annulus fibrosus cells. *Tissue Engineering - Part A*, **2010**, 16, 1443-55 | 3.9 | 33 |
| 65 | An organ culture system to model early degenerative changes of the intervertebral disc II: profiling global gene expression changes. *Arthritis Research and Therapy*, **2013**, 15, R121 | 5.7 | 32 |
| 64 | Is the spinal motion segment a diarthrodial polyaxial joint: what a nice nucleus like you doing in a joint like this?. *Bone*, **2012**, 50, 771-6 | 4.7 | 32 |
| 63 | Hydrogel-coated textile scaffolds as candidate in liver tissue engineering: II. Evaluation of spheroid formation and viability of hepatocytes. *Journal of Biomaterials Science, Polymer Edition*, **2003**, 14, 719-31 | 3.5 | 32 |
| 62 | Class I and IIa HDACs Mediate HIF-1 Stability Through PHD2-Dependent Mechanism, While HDAC6, a Class IIb Member, Promotes HIF-1 Transcriptional Activity in Nucleus Pulposus Cells of the Intervertebral Disc. *Journal of Bone and Mineral Research*, **2016**, 31, 1287-99 | 6.3 | 30 |
| 61 | Transgenic mice overexpressing human TNF- experience early onset spontaneous intervertebral disc herniation in the absence of overt degeneration. *Cell Death and Disease*, **2018**, 10, 7 | 9.8 | 29 |
| 60 | TNF- promotes nuclear enrichment of the transcription factor TonEBP/NFAT5 to selectively control inflammatory but not osmoregulatory responses in nucleus pulposus cells. *Journal of Biological Chemistry*, **2017**, 292, 17561-17575 | 5.4 | 29 |
| 59 | N-cadherin is Key to Expression of the Nucleus Pulposus Cell Phenotype under Selective Substrate Culture Conditions. *Scientific Reports*, **2016**, 6, 28038 | 4.9 | 28 |
| 58 | SMAD3 functions as a transcriptional repressor of acid-sensing ion channel 3 (ASIC3) in nucleus pulposus cells of the intervertebral disc. *Journal of Bone and Mineral Research*, **2008**, 23, 1619-28 | 6.3 | 28 |
| 57 | A New Understanding of the Role of IL-1 in Age-Related Intervertebral Disc Degeneration in a Murine Model. *Journal of Bone and Mineral Research*, **2019**, 34, 1531-1542 | 6.3 | 26 |
| 56 | Hypoxic Regulation of Mitochondrial Metabolism and Mitophagy in Nucleus Pulposus Cells Is Dependent on HIF-1BNIP3 Axis. *Journal of Bone and Mineral Research*, **2020**, 35, 1504-1524 | 6.3 | 26 |
| 55 | Molecular regulation of CCN2 in the intervertebral disc: lessons learned from other connective tissues. *Matrix Biology*, **2013**, 32, 298-306 | 11.4 | 26 |
| 54 | Bicarbonate Recycling by HIF-1-Dependent Carbonic Anhydrase Isoforms 9 and 12 Is Critical in Maintaining Intracellular pH and Viability of Nucleus Pulposus Cells. *Journal of Bone and Mineral Research*, **2018**, 33, 338-355 | 6.3 | 25 |
| 53 | Syndecan-4 in intervertebral disc and cartilage: Saint or synner?. *Matrix Biology*, **2016**, 52-54, 355-362 | 11.4 | 25 |
| 52 | Hypoxia-inducible factor regulation of ANK expression in nucleus pulposus cells: possible implications in controlling dystrophic mineralization in the intervertebral disc. *Arthritis and Rheumatism*, **2010**, 62, 2707-15 | | 25 |
| 51 | Sox9 deletion causes severe intervertebral disc degeneration characterized by apoptosis, matrix remodeling, and compartment-specific transcriptomic changes. *Matrix Biology*, **2020**, 94, 110-133 | 11.4 | 25 |
| 50 | RNA Sequencing Reveals a Role of TonEBP Transcription Factor in Regulation of Pro-inflammatory Genes in Response to Hyperosmolarity in Healthy Nucleus Pulposus Cells: A HOMEOSTATIC RESPONSE?. *Journal of Biological Chemistry*, **2016**, 291, 26686-26697 | 5.4 | 25 |
| 49 | Expression of Carbonic Anhydrase III, a Nucleus Pulposus Phenotypic Marker, is Hypoxia-responsive and Confers Protection from Oxidative Stress-induced Cell Death. *Scientific Reports*, **2018**, 8, 4856 | 4.9 | 24 |

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| 48 | HIF-1-PHD2 axis controls expression of syndecan 4 in nucleus pulposus cells. *FASEB Journal*, **2014**, 28, 2455-65 | 0.9 | 24 |
| 47 | TonEBP-deficiency accelerates intervertebral disc degeneration underscored by matrix remodeling, cytoskeletal rearrangements, and changes in proinflammatory gene expression. *Matrix Biology*, **2020**, 87, 94-111 | 11.4 | 24 |
| 46 | In vivo biocompatibility evaluation of cellulose macrocapsules for islet immunoisolation: Implications of low molecular weight cut-off. *Journal of Biomedical Materials Research Part B*, **2003**, 66, 86-92 | | 23 |
| 45 | Xylosyltransferase-1 expression is refractory to inhibition by the inflammatory cytokines tumor necrosis factor and IL-1 in nucleus pulposus cells: novel regulation by AP-1, Sp1, and Sp3. *American Journal of Pathology*, **2015**, 185, 485-95 | 5.8 | 22 |
| 44 | Transforming growth factor controls CCN3 expression in nucleus pulposus cells of the intervertebral disc. *Arthritis and Rheumatism*, **2011**, 63, 3022-31 | | 22 |
| 43 | Galectin-3 expression in the intervertebral disc: a useful marker of the notochord phenotype?. *Spine*, **2007**, 32, 9-16 | 3.3 | 22 |
| 42 | Circadian factors BMAL1 and RORcontrol HIF-1transcriptional activity in nucleus pulposus cells: implications in maintenance of intervertebral disc health. *Oncotarget*, **2016**, 7, 23056-71 | 3.3 | 20 |
| 41 | Long-term treatment with senolytic drugs Dasatinib and Quercetin ameliorates age-dependent intervertebral disc degeneration in mice. *Nature Communications*, **2021**, 12, 5213 | 17.4 | 20 |
| 40 | TGFregulates Galectin-3 expression through canonical Smad3 signaling pathway in nucleus pulposus cells: implications in intervertebral disc degeneration. *Matrix Biology*, **2016**, 50, 39-52 | 11.4 | 19 |
| 39 | Radio-frequency plasma treatment improves the growth and attachment of endothelial cells on poly(methyl methacrylate) substrates: implications in tissue engineering. *Journal of Biomaterials Science, Polymer Edition*, **2002**, 13, 1067-80 | 3.5 | 19 |
| 38 | COX-2 expression mediated by calcium-TonEBP signaling axis under hyperosmotic conditions serves osmoprotective function in nucleus pulposus cells. *Journal of Biological Chemistry*, **2018**, 293, 8969-8981 | 5.4 | 18 |
| 37 | RNA binding protein HuR regulates extracellular matrix gene expression and pH homeostasis independent of controlling HIF-1signaling in nucleus pulposus cells. *Matrix Biology*, **2019**, 77, 23-40 | 11.4 | 18 |
| 36 | Aquaporin 1 and 5 expression decreases during human intervertebral disc degeneration: Novel HIF-1-mediated regulation of aquaporins in NP cells. *Oncotarget*, **2015**, 6, 11945-58 | 3.3 | 18 |
| 35 | Lactate Efflux From Intervertebral Disc Cells Is Required for Maintenance of Spine Health. *Journal of Bone and Mineral Research*, **2020**, 35, 550-570 | 6.3 | 18 |
| 34 | PHD3 is a transcriptional coactivator of HIF-1in nucleus pulposus cells independent of the PKM2-JMJD5 axis. *FASEB Journal*, **2017**, 31, 3831-3847 | 0.9 | 17 |
| 33 | FIH-1-Mint3 axis does not control HIF-1 transcriptional activity in nucleus pulposus cells. *Journal of Biological Chemistry*, **2014**, 289, 20594-605 | 5.4 | 17 |
| 32 | Nonporous polyurethane membranes as islet immunoisolation matrices--biocompatibility studies. *Journal of Biomaterials Applications*, **2002**, 16, 327-40 | 2.9 | 17 |
| 31 | A simple microcapsule generator design for islet encapsulation. *Journal of Biosciences*, **1999**, 24, 371-376 | 2.3 | 17 |

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| 30 | Comparison of inbred mouse strains shows diverse phenotypic outcomes of intervertebral disc aging. *Aging Cell*, **2020**, 19, e13148 | 9.9 | 15 |
| 29 | Differential gene expression in anterior and posterior annulus fibrosus. *Spine*, **2014**, 39, 1917-23 | 3.3 | 14 |
| 28 | Substance P Receptor Antagonist Suppresses Inflammatory Cytokine Expression in Human Disc Cells. *Spine*, **2015**, 40, 1261-9 | 3.3 | 13 |
| 27 | Islet immunoisolation: experience with biopolymers. *Journal of Biomaterials Science, Polymer Edition*, **2001**, 12, 1243-52 | 3.5 | 13 |
| 26 | Discovery of the drivers of inflammation induced chronic low back pain: from bacteria to diabetes. *Discovery Medicine*, **2015**, 20, 177-84 | 2.5 | 13 |
| 25 | Lack of evidence for involvement of TonEBP and hyperosmotic stimulus in induction of autophagy in the nucleus pulposus. *Scientific Reports*, **2017**, 7, 4543 | 4.9 | 12 |
| 24 | Arp2/3 inactivation causes intervertebral disc and cartilage degeneration with dysregulated TonEBP-mediated osmoadaptation. *JCI Insight*, **2020**, 5, | 9.9 | 12 |
| 23 | Differential Effect of Long-Term Systemic Exposure of TNFb on Health of the Annulus Fibrosus and Nucleus Pulposus of the Intervertebral Disc. *Journal of Bone and Mineral Research*, **2020**, 35, 725-737 | 6.3 | 12 |
| 22 | Understanding embryonic development for cell-based therapies of intervertebral disc degeneration: Toward an effort to treat disc degeneration subphenotypes. *Developmental Dynamics*, **2021**, 250, 302-317 | 2.9 | 12 |
| 21 | NFAT5/TonEBP controls early acquisition of notochord phenotypic markers, collagen composition, and sonic hedgehog signaling during mouse intervertebral disc embryogenesis. *Developmental Biology*, **2019**, 455, 369-381 | 3.1 | 11 |
| 20 | Modeling of phosphate ion transfer to the surface of osteoblasts under normal gravity and simulated microgravity conditions. *Annals of the New York Academy of Sciences*, **2004**, 1027, 85-98 | 6.5 | 11 |
| 19 | Biocompatibility assessment of polytetrafluoroethylene/wollastonite composites using endothelial cells and macrophages. *Journal of Biomaterials Science, Polymer Edition*, **2001**, 12, 1177-89 | 3.5 | 11 |
| 18 | The role of HIF proteins in maintaining the metabolic health of the intervertebral disc. *Nature Reviews Rheumatology*, **2021**, 17, 426-439 | 8.1 | 11 |
| 17 | Smad3 controls 1,3-glucuronosyltransferase 1 expression in rat nucleus pulposus cells: implications of dysregulated expression in disc disease. *Arthritis and Rheumatism*, **2012**, 64, 3324-33 | | 10 |
| 16 | Islet cryopreservation: improved recovery following taurine pretreatment. *Cell Transplantation*, **2001**, 10, 247-53 | 4 | 10 |
| 15 | Introduction to the Structure, Function, and Comparative Anatomy of the Vertebrae and the Intervertebral Disc **2014**, 3-15 | | 8 |
| 14 | Alterations in ECM signature underscore multiple sub-phenotypes of intervertebral disc degeneration. *Matrix Biology Plus*, **2020**, 6-7, 100036 | 5.1 | 7 |
| 13 | Role of autophagy in intervertebral disc and cartilage function: implications in health and disease. *Matrix Biology*, **2021**, 100-101, 207-220 | 11.4 | 7 |

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| 12 | New horizons in spine research: Intervertebral disc repair and regeneration. *Journal of Orthopaedic Research*, **2017**, 35, 5-7 | 3.8 | 6 |
| 11 | Development of a standardized histopathology scoring system using machine learning algorithms for intervertebral disc degeneration in the mouse model-An ORS spine section initiative. *JOR Spine*, **2021**, 4, e1164 | 3.7 | 6 |
| 10 | Hypoxia and Hypoxia-Inducible Factor-1 Regulate Endoplasmic Reticulum Stress in Nucleus Pulposus Cells: Implications of Endoplasmic Reticulum Stress for Extracellular Matrix Secretion. *American Journal of Pathology*, **2021**, 191, 487-502 | 5.8 | 5 |
| 9 | New horizons in spine research: Disc biology, tissue engineering, biomechanics, translational, and clinical research. *JOR Spine*, **2018**, 1, e1032 | 3.7 | 5 |
| 8 | Hydrogel-coated textile scaffolds as three-dimensional growth support for human umbilical vein endothelial cells (HUVECs): possibilities as coculture system in liver tissue engineering. *Cell Transplantation*, **2002**, 11, 369-77 | 4 | 4 |
| 7 | Microenvironmental Control of Disc Cell Function: Influence of Hypoxia and Osmotic Pressure **2014** , 93-108 | | 3 |
| 6 | Nucleus pulposus primary cilia alter their length in response to changes in extracellular osmolarity but do not control TonEBP-mediated osmoregulation. *Scientific Reports*, **2019**, 9, 15469 | 4.9 | 1 |
| 5 | Immunocytochemical localization of growth hormone-releasing hormone-like peptide in the brain of the tiger frog, Rana tigrina. *General and Comparative Endocrinology*, **2002**, 126, 200-12 | 3 | 1 |
| 4 | New Horizons in Spine Research: Disc biology, spine biomechanics and pathomechanisms of back pain. *Journal of Orthopaedic Research*, **2016**, 34, 1287-8 | 3.8 | 0 |
| 3 | Null Mice-a Model for Mineralization Disorder PXE Shows Vertebral Osteopenia Without Enhanced Intervertebral Disc Calcification With Aging.. *Frontiers in Cell and Developmental Biology*, **2022**, 10, 823249 | 5.7 | 0 |
| 2 | Selective cytotoxicity of MIA Pa Ca-2 conditioned medium to acinar cells: a novel approach to reduce acinar cell contaminants in isolated islet preparations from BALB/c mice. *Transplant International*, **2001**, 14, 191-5 | 3 | |
| 1 | Challenges in Cell-Based Therapies for Intervertebral Disc Regeneration: Lessons Learned From Embryonic Development and Pathophysiology **2018**, 149-180 | | |