

HESAM DEHGHANI

Hesam Dehghani, DVM, PhD

Full Professor (June 2015)

Associate Professor (March 2011-June 2015)

Assistant Professor (January 2006-March 2011)

Stem Cells and Regenerative Medicine Research Group,
Research Institute of Biotechnology,
AND

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Education and Training

2003- 2006: Post-Doctoral Research Fellowship, Programme in Cell Biology, The Research Institute, The Hospital for Sick Children, Toronto, Canada

Fields of research: Relationship of chromatin and subnuclear domain structures to gene regulation in preimplantation mouse embryos. Mechanisms of gene and chromosome silencing in embryonic stem and germ cells

2001- 2002: Post-Doctoral Research Fellowship, Department of Biochemistry, University of Guelph, Guelph, Canada

Field of research: Characterization of the expression, intracellular location, and function of proteins involved in tRNA nuclear export in *Saccharomyces cerevisiae*

1997- 2001: Doctor of Philosophy (Ph.D.) in Mammalian Developmental Biology,

Department of Biomedical Science, University of Guelph, Guelph, Canada

Field of research: Embryonic alkaline phosphatase and protein kinase C in preimplantation mouse development

1986- 1991: Doctorate in Veterinary Medicine (D.V.M.)

School of Veterinary Medicine, University of Tehran, Tehran, Iran

Thesis: Physiopathology of downer cow syndrome

Awards and special recognitions

- Distinguished Professor, Ferdowsi University of Mashhad, 2015
- Distinguished Professor, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, 2014
- The First Top Technologist of the Khorasan Razavi Province, 2014
- Distinguished Professor, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, 2013
- Distinguished Professor, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, 2012

- Distinguished Professor, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, 2011
- Distinguished Professor, Ferdowsi University of Mashhad, 2008
- Co-applicant: Natural Sciences and Engineering Research Council of Canada grant entitled "Large Scale Nuclear Organization of Gene Activity", \$282,000 over 5 years from 2006
- Co-applicant: Canadian Institutes of Health Research grant entitled "Formation of Nuclear Domains in Development", \$615,320 over 5 years from 2005
- Best Presentation Award of Biomedical Sciences, OVC, University of Guelph, 2000
- Laforett Research Award, University of Guelph, 2000
- American Society for Cell Biology Pre-doctoral Award, 1999
- Graduate Student Scholarship, University of Guelph, 1999
- Pfizer Graduate Research Award, 1998
- Betty Goldhart Scholarship, University of Guelph, 1998
- Graduate Student Scholarship, University of Guelph, 1997
- Scholarship, Ministry of Culture and Higher Education of Iran, 1997

Work experience

- Editor-in chief, Iranian Journal of Veterinary Science and Technology (2017-present)
- Director, Institute of Biotechnology, Ferdowsi University of Mashhad, Mashhad, Iran (2014-present)
- Chair, Stem cells and Regenerative Medicine Research Group, Research Institute of Biotechnology, Ferdowsi University of Mashhad, Mashhad, Iran (2008-present)
- Chair, Division of Biotechnology, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran (2007-April 2016)
- Full Professor: Department of Basic Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran (June 2015-present)
- Member of board of directors, The biotech knowledge-based company of DENAzist Asia, Mashhad, Iran (September 2010-present)
- Associate Professor: Department of Basic Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran (March 2011-June 2015)
- Assistant Professor: Department of Basic Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran (2006-March 2011)
- Lecturer: Department of Basic Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran (1992-1996)

Research interests and areas of expertise

Primary Discipline

- Genome editing and transgenesis in higher animals, Molecular and Cellular Biology of cancer, Epigenetic editing for therapeutic purposes

Secondary Disciplines

- Molecular mechanisms of pluripotency and reprogramming
- Transgenesis of stem cells and germ cells

- Genome and epigenome editing (using programmable nucleases) in mammalian and avian cells
- Gene and chromosome silencing in embryonic stem cells
- Dynamics of chromatin and nuclear organization during differentiation of germ cells
- Role of PML nuclear bodies during development
- The effects of intracellular signaling pathways on chromatin remodeling and cellular differentiation in mammalian development

Experimental techniques

- Genome editing
- Epigenetic engineering
- Culture, live-cell imaging and manipulation of preimplantation embryos, ES cells, and germ cells
- Electron spectroscopic imaging (ESI)
- Correlative fluorescence microscopy and laser scanning confocal microscopy
- DNA and RNA Fluorescence in situ hybridization (FISH), immuno-FISH, and immunocytochemistry
- Expression analysis and characterization of cellular proteins, and protein-protein and protein-nucleic acid interactions
- PCR, RT-PCR, RACE, qPCR
- Gene silencing by RNAi in mammalian cells
- Manipulation of the mouse genome, transgenesis, and mutagenesis
- Molecular biology techniques
- Yeast molecular and cellular biology techniques

Publications

Books

- **Dehghani, Hesam.** "Immunocytochemistry in early mammalian embryos." Applications of Immunocytochemistry. Ed. Hesam Dehghani. InTech, 2012.
- **Dehghani, H.** (Ed.). (2012). Applications of Immunocytochemistry. InTech.

Peer-reviewed and refereed papers

- 65 Zare K, Shademan M, Ghahramani Seno MM, **Dehghani H.** CRISPR/Cas9 knockout strategies to ablate CCAT1 lncRNA gene in cancer cells. *Biological Procedures Online.* **2018** (In Press).
- 64 Soltanian S, **Dehghani H.** BORIS: a key regulator of cancer stemness. *Cancer Cell International.* **2018**;18:154.
- 63 Khazaei E, Farzaneh N, Mirshokraei P, Tabatabaeizadeh S-E, **Dehghani H.** Expression of endogenous retroviruses in pre-implantation stages of bovine embryo. *Reprod Dom Anim.* **2018**;00:1–10
- 62 Mehrzad J, Bahari A, Bassami MR, Mahmoudi M, **Dehghani H.** Data on environmentally relevant level of aflatoxin B1-induced human dendritic cells' functional alteration. *Data Brief.* **2018** Apr 30;18:1576-1580.
- 61 Khosravinia S, Mahdavi MA, Gheshlaghi R, **Dehghani H,** Rasekh B. Construction and Characterization of a New Recombinant Vector to Remove Sulfate Repression of dsz Promoter Transcription in Biodesulfurization of Dibenzothiophene. *Front Microbiol.* **2018** July; 9:1-9.

- 60 Mehrzad J, Bahari A, Bassami MR, Mahmoudi M, **Dehghani H**. Immunobiologically relevant level of aflatoxin B1 alters transcription of key functional immune genes, phagocytosis and survival of human dendritic cells. *Immunol Lett*. **2018** May;197:44-52.
- 59 Khosravinia S, Mahdavi MA, Gheshlaghi R, **Dehghani H**. Characterization of Truncated dsz Operon Responsible for Dibenzothiophene Biodesulfurization in *Rhodococcus* sp. FUM94. *Appl Biochem Biotechnol*. **2018** Mar;184(3):885-896.
- 58 Zahedi M, Parham A, **Dehghani H**, Mehrjerdi HK. Stemness Signature of Equine Marrow-derived Mesenchymal Stem Cells. *Int J Stem Cells*. 2017 May 30;10(1):93-102.
- 57 Sisakhtnezhad S, Bahrami AR, Matin, MM, **Dehghani H**, B. Rassouli F, Momeni-Moghaddam M, Boozarpour S. Establishment of a culture condition for strong proliferation and enrichment of chicken spermatogonial stem cells in vitro. *Iranian J Vet Sci Tech*. 2016 8(1):25-32.
- 56 Lagzian M, Bassami MR, **Dehghani H** (2016). In Vitro Responses of Chicken Macrophage-Like Monocytes Following Exposure to Pathogenic and Non-Pathogenic *E. coli* Ghosts Loaded with a Rational Design of Conserved Genetic Materials of Influenza and Newcastle Disease Viruses. *Veterinary Immunology and Immunopathology*. 2016 Aug;176:5-17.
- 55 Boozarpour S, Matin MM, Momeni-Moghaddam M, **Dehghani H**, Mahdavi-Shahri N, Sisakhtnezhad S, Heirani-Tabasi A, Irfan-Maqsood M, Bahrami AR (2016). Glial cell derived neurotrophic factor induces spermatogonial stem cell marker genes in chicken mesenchymal stem cells. *Tissue and Cell*. 2016 Jun;48(3):235-41..
- 54 Es-haghi M, Soltanian S, **Dehghani H** (2016). Perspective: Cooperation of Nanog, NF- κ B and CXCR4 in a regulatory network for directed migration of cancer stem cells. *Tumor Biology*. 37(2):1559-65.
- 53 Es-haghi MR, Bassami S, **Dehghani H** (2016). Construction and quantitative validation of chicken CXCR4 expression reporter. *Molecular Biotechnology*. 58 202–211.
- 52 Shademan M, Parham A, **Dehghani H** (2016). Enhancement of chondrogenic differentiation potential of equine adipose tissue-derived mesenchymal stem cells using TGF- β 3 and BMP-6. *Turkish Journal of Biology*. 40: 360-368.
- 51 Amiri Roudbar M, **Dehghani H**, Tahmoorespur M, Zahmatkesh A, Adeldust H, Ansari Majd S, Daliri Joupari M (2015). Quantitative analysis of RNA abundance for CTCF during reprogramming of bovine embryo from oocyte to blastocyst. *Archives Animal Breeding*. 58 171-175.
- 50 Ghaemi M, Bassami MR, Hashemitabar GH, Saberi MR, Haghparast A, **Dehghani H** (2015). A bioinformatic approach to check the spatial epitope structure of an immunogenic protein coded by DNA vaccine plasmids. *Journal of Theoretical Biology*. 380 (9) 315–320.
- 49 Ghaemi M, Bassami MR, Hashemitabar GH, Saberi MR, Haghparast A, **Dehghani H** (2015). Antibody response effect of fusing IgY and C3d gene segments to hemagglutinin9 (H9) gene on influenza DNA vaccines in chicken. *Online Journal of Veterinary Research*. 19 (4) 237-246.
- 48 Razavi MK, Raji AR, Maleki M, **Dehghani H** (2015). Histopathological and immunohistochemical study of rat brain tissue after exposure to mobile phone radiation. *Comparative Clinical Pathology*. 24 (5) 1271–1276.
- 47 Kheirabadi M, Nabipour A, Behnam Rassouli M, **Dehghani H** (2015). Morphological development of ovaries in ostrich (*Struthio camelus*) embryo. *Comparative Clinical Pathology*. 23 (580) 1-7.
- 46 Tabatabaeizadeh E, Bassami MR, Haghparast A, **Dehghani H** (2015). Employing XIAP to Enhance the Duration of Antigen Expression and Immunity against an Avian Influenza H5 DNA Vaccine. *Immunological investigations*. 44 (3) 199-215.
- 45 Moshtaghi N, Karimi M, Malekzadeh S, **Dehghani H** (2015). Expression of endoglucanase Cel5a in *Pichia pastoris*. *Journal of Agricultural Biotechnology*. In press.

- 44 Sisakhtnezhad S, Bahrami AR, Matin M, **Dehghani H**, Momeni moghaddam M, Boozarpour S, Farshchyian M, Dastpak M (2015). The molecular signature and spermatogenesis potential of newborn chicken spermatogonial stem cells in vitro. *In Vitro Cellular & Developmental Biology – Animal*. 51(4):415-25.
- 43 Shamshirgaran Y, Tahmoorespur M, Taheri-Ghahfarokhi A, **Dehghani H**, Sumer H, Verma PJ (2015). Up-Regulation of Sox2 Gene in Bovine Fibroblasts using TALE-TFs. *Iranian Journal of Studies of Animal Sciences*. In press.
- 42 Valleh MV, Tahmoorespur M, Joupari MD, **Dehghani H**, Rasmussen MA, Hyttel P, Strøbech L (2015). Paternal breed effects on expression of IGF-II, BAK1 and BCL2-L1 in bovine preimplantation embryos. *Zygote*. 23 (5) 712-721.
- 41 Alipour F, Parham A, Kazemi Mehrjerdi H, **Dehghani H** (2015). Equine adipose-derived mesenchymal stem cells: phenotype and growth characteristics, gene expression profile and differentiation potentials. *Cell Journal*. 16 (4) 456-465.
- 40 **Dehghani H** (2014). The pluripotency feature of cancer cells; product of a harmony or an output of a disharmony. *Journal of Cell and Molecular Research*. 6 (2): 50-51.
- 39 Taheri-Ghahfarokhi A, Tahmoorespur M, **Dehghani H**, Shamshirgaran Y, Sumer H, Liu J, Verma PJ (2014). Efficient TALEN-Mediated Mutagenesis on a Highly Conserved Region of Myostatin Gene in Mouse Embryonic Stem Cells. *Indian Journal of Animal Sciences*. 84 (11) 1185-1191.
- 38 Bahari A, Mehrzad J, Mahmoudi M, Bassami MR, **Dehghani H** (2014). GST-M1 is transcribed moreso than AKR7A2 in AFB1-exposed human monocytes and lymphocytes. *J Immunotoxicol*. 12 (2): 194-198.
- 37 Soltanian S, **Dehghani H**, Matin MM, Bahrami AR (2014). Expression analysis of BORIS during pluripotent, differentiated, cancerous, and non-cancerous cell states. *Acta Biochim Biophys Sin*. 46: 647–658.
- 36 Ghovvati S, Tahmoorespur M, Nassiri MR, Bahrami AR, **Dehghani H**, Borghaei H, Adams G (2014). Isolation and Characterization of A Panel of Anti-HER2 Scfv Molecules by Phage Display Technology. *Iranian Journal of Obstetrics, Gynecology and Infertility*. 17 (92): 19-37.
- 35 Bahari A, Mehrzad J, Mahmoudi M, Bassami MR, **Dehghani H** (2014). Cytochrome P450 isoforms are differently up-regulated in aflatoxin B1-exposed human lymphocytes and monocytes. *Immunopharmacology and Immunotoxicology*. 36 (1):1-10.
- 34 Hassanzadeh B, Nabipour A, Behnam Rassouli M, **Dehghani H** (2014). Morphological development of testes in ostrich (*Struthio camelus*) embryo. *Anatomical Science International*. 89(3):129-39.
- 33 Mojaver MJ, Bassami MR, **Dehghani H**, Bozorgmehri MH (2014). Development of An Indirect Enzyme-linked Immunosorbent Assay (ELISA) for the detection and quantification of avian influenza A, subtype H5 using a recombinant H5 antigen expressed in sf9 insect cells. *European Journal of Zoological Research*. 3 (2):28-36.
- 32 Mojaver MJ, Bassami MR, **Dehghani H**, Bozorgmehri MH (2014). Highly pathogenic avian influenza virus H5N1 neurominidase expressed in SF9 insect cells with a baculovirus free system. *Int. J. LifeSc. Bt & Pharm. Re*. 3 (2):51-56.
- 31 Naeemipour M, **Dehghani H**, Bassami MR, Bahrami AR (2013). Expression dynamics of pluripotency genes in chicken primordial germ cells before and after colonization of genital ridges. *Molecular Reproduction & Development*. 80(10):840-848.

- 30 Hassanzadeh B, Nabipour A, Behnam Rassouli M, **Dehghani H** (2013). Microanatomical study of testis in juvenile ostrich (*Struthio camelus*). *Anatomical Science International*. 88(3):134-40.
- 29 Sadeghi B, Nassiri M, Masoudi-Nejad A, Tahmoorespour M, **Dehghani H** (2013). Computational Analyses for Identification Novel MicroRNAs from Cattle and Sheep. *Journal of Cell and Molecular Research*. 4 (2): 62-67.
- 28 Jamil F, Behnam Rassouli M, Mahdavi Shahri N, **Dehghani H** (2013). Study of the Effects of Hyperglycemia and Insulin Therapy on Uterus Histology and Estrous cycle in Wistar Rat. *Journal of Cell & Tissue*. 4(2): 149-157.
- 27 Foroughi MA, **Dehghani H** (2013). Quantitative comparison of iodothyronine deiodinase I and II mRNA expression in ovine tissues. *Research in Veterinary Science*. 95(3):891-893.
- 26 Foroughi MA, **Dehghani H**, Mahdavi-Shahri N, Bassami MR (2013). Sodium selenite increases the transcript levels of iodothyronine deiodinases I and II in ovine and bovine fetal thyrocytes in vitro. *Journal of Trace Elements in Medicine and Biology*. 27(3):213-220.
- 25 Hemmatian Khayyat S, Parham A and **Dehghani H** (2013). The effect of co-culturing denuded oocytes on the in vitro maturation of bovine cumulus-oocyte complexes. *Res. Opin. Anim. Vet. Sci*. 3(12), 447-452.
- 24 Parham A, **Dehghani H**, Zahedi M (2012). Expression of functional leptin receptor (OB-Rb) mRNA in the sheep tissues. *Research Opinions in Animal & Veterinary Sciences*. 2:449-453.
- 23 Roudsari MT, Bahrami AR, **Dehghani H**, Iranshahi M, Moghadam Matin M, Mahmoudi M (2012). Bracken-fern Extracts Induce Cell Cycle Arrest and Apoptosis in Certain Cancer Cell Lines. *Asian Pacific Journal of Cancer Prevention*. 13(12):6047-53.
- 22 Rashtibaf M, Sharifi K, Zibae S, **Dehghani H** (2012). A survey on the frequency of foot-and-mouth disease virus carriers in cattle in northeast of Iran by RT-PCR: implications for revising disease control strategy. *Transboundary and Emerging Diseases*. 59(6):482-489.
- 21 Nabipour A, **Dehghani H** (2012). Light and Electron Microscopic Features of the Kidney in Hedgehog (*Hemiechinus auritus*). *J. Vet. Anat*. 5(1): 91-106.
- 20 Dastjerdi K, Hashemi-Tabar GH, **Dehghani H**, Haghparast A (2011). Generation of an enriched pool of DNA aptamers for an HER2-overexpressing cell line selected by Cell SELEX. *Biotechnology and applied Biochemistry*. 58(4):226-230.
- 19 Abavisani A, Baghbanzadeh A, Shayan P, **Dehghani H** (2011). Leptin mRNA in bovine spermatozoa. *Research in Veterinary Science*. 90: 439-442.
- 18 Fussner E, Ahmed K, **Dehghani H**, Strauss M, Bazett-Jones DP (2010). Changes in Chromatin Fiber Density as a Marker for Pluripotency. *Cold Spring Harb Symp Quant Biol*. 75:245-259.
- 17 Ebrahimian M, Mojtahedzadeh M, Bazett-Jones D, **Dehghani H** (2010). Transcript isoforms of promyelocytic leukemia in mouse male and female gametes. *Cells Tissues Organs*. 192(6):374-381.
- 16 Ahmed K*, **Dehghani H***, Rugg-Gunn P, Fussner E, Rossant J, Bazett-Jones J (2010). Global chromatin architecture reflects pluripotency and lineage commitment in the early mouse embryo. *PLoS One*. 5 (5):1-13. (*: co-first authors)
- 15 Abavisani A, Baghbanzadeh A, Shayan P, Tajik P, **Dehghani H**, Mirtorabi M (2009). Leptin mRNA expresses in the bull reproductive organ. *Veterinary Research Communications*.33 (8): 823-830.

- 14 Efroni S, Duttagupta R, Cheng J, **Dehghani H**, Hoepfner DJ, Dash C, Bazett-Jones D, Le Grice S, McKay RDG, Buetow KH, Gingeras T, Misteli T, Meshorer E (2008). Global transcription in pluripotent embryonic stem cells. *Cell stem Cell* 2: 437-447.
- 13 Bazett-Jones DP, Li R, Fussner E, Nisman R, **Dehghani H** (2008). Elucidating chromatin and nuclear domain architecture with electron spectroscopic imaging. *Chromosome Research* 16:397-412.
- 12 **Dehghani H**. (2007) Molecular basis of differential gene expression in the mouse preimplantation embryo. *Iranian Journal of Biotechnology* 5 (2): 67-78.
- 11 Dellaire G, Eskiw CH, **Dehghani H**, Ching RW, Bazett-Jones DP (2006). Mitotic accumulations of PML protein contribute to the re-establishment of PML nuclear bodies in G1. *Journal of Cell Science* 119 (6): 1034-1042.
- 10 Dellaire G, Ching RW, **Dehghani H**, Ren Y, Bazett-Jones DP (2006). The number of PML nuclear bodies increases in early S phase by a fission mechanism. *Journal of Cell Science* 119 (6): 1026-1033.
- 9 **Dehghani H**, Reith C, Hahnel AC (2005). Sub-cellular localization of protein kinase C delta and epsilon affects transcriptional and post-transcriptional processes in preimplantation mouse embryos. *Reproduction* 130 (4): 441-451.
- 8 **Dehghani H**, Hahnel AC (2005). Expression profile of protein kinase C isozymes in preimplantation mouse development. *Reproduction* 130 (4): 453-465.
- 7 **Dehghani H**, Dellaire G, Bazett-Jones DP (2005). Organization of chromatin in the interphase mammalian cell. *Micron* 36(2):95-108 .
- 6 Steiner-Mosonyi M, Leslie DM, **Dehghani H**, Aitchison JD, Mangroo D (2003). Utp8p is an essential intranuclear component of the nuclear tRNA export machinery of *Saccharomyces cerevisiae*. *Journal of Biological Chemistry* 278:32236-45 .
- 5 **Dehghani H**, Hahnel AC (2001). Transcriptional effects of altering protein kinase c distribution in four-cell-stage mouse embryos. *Developmental Biology* 235:267.
- 4 **Dehghani H**, Narisawa S, Millan JL, Hahnel AC (2000). Effects of disruption of the embryonic alkaline phosphatase gene on preimplantation development of the mouse. *Developmental Dynamics* 217:440-448.
- 3 **Dehghani H**, Hahnel AC (2000). Effects of protein kinase C on pre-mRNA processing in the preimplantation mouse embryo. *Molecular Biology of the Cell* Dec; 11 Suppl.: 60a .
- 2 **Dehghani H**, Hahnel AC (2000). Profile of protein kinase C isozymes in preimplantation mouse development. *Developmental Biology* 222:273 .
- 1 **Dehghani H**, Narisawa S, Millan JL, Hahnel AC (1999). Disruption of the "embryonic alkaline phosphatase" gene delays preimplantation development of the mouse embryo. *Molecular Biology of the Cell* Nov; 10 Suppl.: 206a .

Presentations as guest speaker/ papers and abstracts published in proceedings

- 30 Invited speaker: Dehghani H. Epigenetic Engineering and Epigenome Editing. The 2nd congress of cytotechnology and its applications. Mashhad, Iran, 20-21 October, 2015.
- 29 Invited speaker: Dehghani H. The roles of large non-coding RNAs (lncRNAs) in stem cell and cancer biology. Stem Cell Research and Application. Mashhad, Iran, 22-23 May, 2014.
- 28 Hosseininia Z, Mahdavi Shahri N, Dehghani H. Study of the expression of a pluripotency-

- associated Long non coding RNA in Embryonic germ cells. 14th Royan International Twin Congress on Reproductive Biomedicine and 9th congress Stem Cells Biology & Technology.
- 27 Shademan M, Parham A, Dehghani H, Zahedi M. Cartilage-specific gene expression in equine mesenchymal stem cells in response to supplemented medium with growth factors. 14th Royan International Twin Congress on Reproductive Biomedicine and 9th congress Stem Cells Biology & Technology. Tehran, Iran, 4-6 September, 2013.
 - 26 Hosseininia Z, Mahdavi Shahri N, Dehghani H. Study of a long coding RNA in Embryonic germ cells. 8th national Biotechnology Congress of Iran and the 4th congress on Biosafety and Genetic Engineering. Tehran, Iran, 6-8 July, 2013.
 - 25 Hassanzadeh B, Nabipour A, Behnam Rassouli M, Dehghani H. Development of Testicular Capsule and Rete Ducts in The Ostrich (*Struthio camelus*) Embryo. 1st Tabriz International Life science Conference, 12th Iran Biophysical Chemistry Conference. Tabriz, Iran, 22-24 May 2013.
 - 24 Shademan M, Parham A, Dehghani H. The Effect of TGF- β 3 on the in vitro Chondrogenic Differentiation of Equine Adipose -Derived Mesenchymal Stem Cells. The first Iranian Annual congress on progress in tissue engineering and regenerative medicine. Tehran, Iran, 18-20 May 2013.
 - 23 Zahedi M, Parham A, Dehghani H, Kazemi Mehrjerdi H. Isolation and characterization of horse bone marrow mesenchymal stem cells for treatment of joint injuries: an animal model for human studies. The first Iranian Annual congress on progress in tissue engineering and regenerative medicine. Tehran, Iran, 18-20 May 2013.
 - 22 Zahedi M, Parham A, Dehghani H. The effects of cell density in primary culture on isolation of bone marrow-derived mesenchymal stem cells. The first Iranian Annual congress on progress in tissue engineering and regenerative medicine. Tehran, Iran, 18-20 May 2013.
 - 21 Shademan M, Parham A, Dehghani H. The effect of age on the chondrogenic differentiation potential of equine adipose-derived mesenchymal stem cells. The 2nd International Congress of Large Animal Practitioners (ICLAP). Tehran, Iran, 27-28 February 2013.
 - 20 Hemmatian Khayyat S, Parham A and Dehghani H. Effect of Increasing Amount of Oocyte Secreted Factors on Cumulus Expansion of Bovine Cumulus-Oocyte Complexes. 13th Royan International Twin Congress on Reproductive Biomedicine and 9th congress Stem Cells Biology & Technology. Tehran, Iran, 5-7 September, 2012.
 - 19 Hassanzadeh B, Nabipour A, Behnam Rassouli M, Dehghani H. Morphological development of testes in ostrich embryo and newly hatched ostrich chick. 4th International Symposium of Clinical and Applied Anatomy. Ankara, Turkey, 28 June-1 July 2012.
 - 18 Invited speaker: Dehghani H. Alteration of nuclear organization as an epigenetic mechanism for the establishment of pluripotency. The Rooyan third stem cell pre-congress. Tehran, Iran, September, 2011.
 - 17 Invited speaker: Dehghani H. Nuclear architecture and epigenetics of lineage choice. Iranian Congress on Biology and Applications of Stem cells, Mashhad, Iran, 27- 29 April 2011
 - 16 Behnam Rassouli M, Rooholamin S, Mahdavi-Shahri N, Dehghani H. Alteration of testicular microanatomical parameters in experimental type 1 and type 2 diabetic rat. 6th ASIA-PACIFIC INTERNATIONAL CONGRESS OF ANATOMY (6TH APICA), Surabaya, Indonesia, 22-23 July, 2011
 - 15 Roudsari MT, Bahrami AR, Dehghani H, Iranshahi M. Investigating the cell cycle of the dechloromethane extract of *Pteridium aquilinum* on bladder carcinoma cells. 2nd national and 1st International congress on Cellular and Molecular Advances in Non Contagious Diseases, Babol, Iran, 16-18 May 2011
 - 14 Dehghani H. Nuclear architecture and epigenetics of lineage choice. Iranian Congress on Biology and Applications of Stem cells, Mashhad, Iran, 27- 29 April 2011
 - 13 Roudsari MT, Bahrami AR, Dehghani H, Iranshahi M. Investigating the chromatin condensation and DNA damage induced by the *Pteridium aquilinum* extract on bladder carcinoma cells.

Symposium on Molecular Aspects of Cancer, Mashhad, Iran, 20 December, 2010

- 12 Rooholamin S, Behnam Rassouli M, Rostami S, Momeni Z, Dehghani H. Investigation of the effects of type 1 and type 2 diabetes on sex hormones in Wistar rat. The 16th National and 4th International Conference of Biology, Mashhad, Iran, 14-16 September 2010
- 11 Dehghani H, Sabbaghi MA, Tavassoli A. Use of spermatogonial stem cells in basic and applied researches of camel. The Regional Conference of Camel Research Priorities, Mashhad, Iran, 15-16 April 2009.
- 10 Abavisani A, Baghbanzadeh A, Shayan P, Tajik P, Dehghani H, Bahreini M. Leptin mRNA is Present in Bovine Ejaculated Spermatozoa. 13th Annual Conference of the European Society for Domestic Animal Reproduction (ESDAR), September 2009, Het Pand_Ghent University, Ghent, Belgium. Abstract (P3) published in *Reproduction in Domestic Animals*, Volume 44 Issue s3 , Pages 1 - 132 (September 2009).
- 9 Bassami MR, Jamshidian M, Dehghani H, Fallah-Rad AH, Mahooti A, Mirzapoor A. Design and introduction of a nested-PCR based on IS900 geen, for molecular detection of Mycobacterium avium subspecies paratuberculosis in fecal samples. The 5th National Botechnology Congress of Iran, November 2007, Tehran, Iran.
- 8 Bassami MR, Jamshidian M, Dehghani H, Ghaniei A, Mahooti A. An optimized degenerative polymerase chain reaction for the detection of chicken infectious anemia in commercial poultry vaccines. The 5th National Botechnology Congress of Iran, November 2007, Tehran, Iran.
- 7 Dehghani H, Bazett-Jones DP. Organization of chromatin in the preimplantation mouse embryo. EMBO Conference on Chromatin and Epigenetics, May 2007, Heidelberg, Germany.
- 6 McGuire AT, Dehghani H, Keates RAB, Chafe SC, Mangroo D. Cex1p is a novel cytoplasmic component of the Saccharomyces cerevisiae nuclear tRNA export machinery that may play a role in unloading of tRNA from the tRNA-nuclear export receptor complex at the NPC. Cellular dynamics, 48th annual meeting of the Canadian society of biochemistry, molecular and cellular biology, March 2005, Banff, Alberta, Canada.
- 5 Dehghani H, Bassami MR, Hashemitabar GR. Ethical issues in animal transgenesis. International congress of bioethics, March 2005, Tehran, Iran.
- 4 Bazett-Jones DP, Dellaire G, Dehghani H, Eskiw CH, Nisman R. Biochemistry in situ: mapping of proteins in subnuclear domains by energy filtered transmission electron microscopy (EFTEM). Dynamic organization of nuclear function, September 2004, Cold Spring Harbor, New York, USA .
- 3 Dehghani H, Hahnel A. Roles of Protein Kinase C in the Preimplantation Mouse Embryo. Oral presentation in the 16th International Congress of Iranian Society of Physiology and Pharmacology, May 2003, Tehran, Iran .
- 2 Dehghani H. Molecular diagnostics in veterinary medicine. Oral presentation in the 3rd Convention of Iranian Veterinary Clinicians, October 2002, Mashhad, Iran .
- 1 Dehghani H, Hahnel A. Intracellular signalling pathways at the onset of mammalian life. Oral presentation in the 1st Iranian Conference of Animal Science and Biodiversity, August 2002, Kerman, Iran .

Theses supervised

- 13 **Mehmandoost M.** Expression analysis of some pluripotency associated retrotransposons genes in embryonic carcinoma cell lines. Ferdowsi University of Mashhad (MSc thesis; January 2015).
- 12 **Soltanian S.** Expression analysis of Boris during retinoic acid induced differentiation of mouse embryonal carcinoma P19 cells. Ferdowsi University of Mashhad (PhD thesis; May 2014).
- 11 **Tabatabaeizadeh E.** Effects of prolonging the lifespan of myocytes expressing a secretory form of hemagglutinin antigen from avian influenza virus (H5N1) on the induction of humoral and cellular responses. Ferdowsi University of Mashhad (PhD thesis; May 2014).

- 10 **Naeimipour M.** Identification of epigenetic reprogramming factors in chicken primordial germ cells in order to increase the efficiency of recombinant proteins. Ferdowsi University of Mashhad (PhD thesis; September 2013).
- 9 **Hoseininia Z.** Expression analysis of some pluripotency associated lincRNA genes in P19 teratocarcinoma cell line. Ferdowsi University of Mashhad (MSc thesis; September 2013).
- 8 **Saberolshoara S.** Devising a method for confirmation of molecular subcloning using multiple displacement amplification (MDA) technique. . Ferdowsi University of Mashhad (DVM thesis; September 2012).
- 7 **Yousefi S.** Study of the effects of Cyp26b1 inhibition on the expression of Stra8 gene during embryonic gonad development in the Ross 308 chicken. Ferdowsi University of Mashhad (MSc thesis; September 2012).
- 6 **Baghestani Z.** Study of promyelocytic leukemia gene expression in bovine sperm. Ferdowsi University of Mashhad (DVM thesis; November 2010).
- 5 **Soltaninezhad V.** Molecular cloning of sheep thioredoxin reductase in sheep. Ferdowsi University of Mashhad (DVM thesis; December 2009).
- 4 **Foroughi-Abari MA.** Study of the effects of selenium on transcriptional activation of iodothyronine deiodinases I and II in ovine fetal thyrocytes. Ferdowsi University of Mashhad (MSc. thesis; September 2009).
- 3 **Mojtahedzadeh M.** The study of promyelocytic leukemia gene expression in mouse sperm. Ferdowsi University of Mashhad (DVM thesis; February 2009).
- 2 **Es-haghi M.** Optimization of a culture medium for in vitro fertilization and culture of bovine preimplantation embryo. Gorgan University (MSc. Thesis; October 2008).
- 1 **Ebrahimian M.** The study of promyelocytic leukemia gene expression in oocytes. Ferdowsi University of Mashhad (DVM thesis; October 2008).

Theses co-supervised

- 6 **Rezaei M.** Immunohistochemical detection of interleukin-17 in canine mammary gland carcinoma. Ferdowsi University of Mashhad (DVM thesis; September 2012).
- 5 **Nozari A.** Study of vaginal electrical resistance patterns in the post-insemination period of Holstein dairy cows. Ferdowsi University of Mashhad (DVM thesis; September 2012).
- 4 **Toorchi M.** Bracken-fern extracts Induce Cell Cycle Arrest and Apoptosis in certain Cancer Cell lines (MSc thesis; October 2011).
- 3 **Ebrahimi-Nik.** Diagnosis of high- and low-pathogenic strains of H5N1 influenza virus by means of RT-qPCR. Ferdowsi University of Mashhad (DVM thesis; October 2010).
- 2 **Mohammadi A.** Designing a RT-PCR test for for the detection of avian leukosis virus contamination in avian vaccines. Ferdowsi University of Mashhad (DVM thesis; September 2008).
- 1 **Jamshidian Mojaver M.** Optimization and application of a RT-PCR test for the detection of avian infectious anemia virus contamination in avian vaccines. Ferdowsi University of Mashhad (DVM thesis; October 2007).

Member of thesis advisory committee

- 23 **Kheirabadi M.** Study of development and histological changes in ovary of ostrich embryo and newly hatched ostrich chick (PhD thesis; July 2015)
- 22 **Ghaemi M.** Assessmant of Immunogenicity of a codon optimized H9 gene fused to eight repeats of DNA sequences of C3d P29 in chicken as a DNA vaccine for avian Influenza H9N2 (PhD thesis; May 2015)

- 21 **Bahari A.** In vitro investigation of the molecular mechanisms involved in activation and disactivation of Aflatoxin B1 in human immune cells (PhD thesis; August 2014)
- 20 **Lagzian M.** A Universal DNA-Vaccine for Avian Influenza Based on M2e Segment and NP Gene: Development of Bacterial Ghosts as a Delivery Method and immunoadjuvant (PhD thesis; June 2014)
- 19 **Hassanzadeh B.** The study of primordial germ cells and histological structure of testis in embryonic and juvenile stages of ostrich development (PhD thesis; January 2014)
- 18 **Taheri A.** Myostatin gene targeting in bovine fibroblast cells by using Transcription Activator Like Effectors (PhD thesis; December 2013)
- 17 **Ariannezhad H.** Feasibility study of cloning and expression phy C gene in Escherichia coli (MSc thesis; November 2013)
- 16 **Shamshirgaran Y.** Modulating of SOX2 Gene Expression in Bovine Fibroblast cells by using Transcription Activator Like Effectors (PhD thesis; October 2013)
- 15 **Boozarpour S.** Investigating the effect of Retinoic Acid and GDNF on expression of germ cell specific markers in chicken bone marrow cells (PhD thesis; October 2013)
- 14 **Sisakhtnezhad S.** Isolation and enrichment of chicken SSC-like cells by surface molecular markers and investigating the significance of GDNF and GFR α 1 in these cells (PhD thesis; August 2013)
- 13 **Shademan M.** In Vitro Chondrogenic Differentiation of Equine Adipose-derived Mesenchymal Stem Cells (PhD thesis; July 2013)
- 12 **Zahedi M.** Isolation and characterization of equine bone marrow-derived mesenchymal stem cells (PhD thesis; July 2013)
- 11 **Sarani A.** Identification of equine herpes viruses- 1 an equine herpes viruses - 4 infections in equidae species in north east of Iran by Real-time PCR (PhD thesis; July 2013)
- 10 **Sadeghi B.** Identification of Ruminantia miRNA genes based on Bioinformatics methods and its experimental validation (PhD thesis; June 2013)
- 9 **Ghovvati Roudsari Sh.** Engineering a scFv-Fc antibody-RNase fusion protein for HER2 antigen targeting (PhD thesis; April 2013)
- 8 **Amiri Roudbar M.** Study of CTCF gene expression in different stages of bovine oocyte maturity (MSc thesis; March 2013)
- 7 **Hemmatian Khayyat S.** The effects of oocyte – secreted factors on in vitro maturation of bovine oocyte (DVM thesis; February 2013)
- 6 **Alipour F.** Isolation and identification of equine adipose mesenchymal stem cells(MSCs) (DVM thesis; October 2012)
- 5 **Karimi M.** Gene transferring of cellulase enzyme from thermobifida fusca to yeast (MSc thesis; September 2012)
- 4 **Jamil F.** Histological effects of hyperglycemia on vistar rats endometrium and myometrium during diestrous stage of estrous cycle (MSc thesis; May 2012)
- 3 **Gharibi S.** Histological study of the effects of hyperglycemia on rat ovary during diestrous stage of estrous cycle in wistar rat (MSc thesis; May 2012)
- 2 **Rohoul_Amin S.** Comparison of the effects of type I and type II diabetes on the structure and physiology of the rat testis (MSc thesis; October 2010)
- 1 **Abavisani A.** Study of leptin transcription in bovine sperm. Tehran University (PhD thesis; May

2008).