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Agricultural Research, Education & Extension Organization (AREEO)
Animal Science Research Institute of IRAN (ASRI)
Department of Biotechnology

CURICULUM VITAE

MOHAMMAD HOSSEIN BANABAZI

Assistant Professor

Ph.D in Animal Genetics & Breeding

Date of birth: 28th April 1974

Place of birth: Karaj, IRAN

Marital status: Married – Two children

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ACADEMIC CAREER

Visiting (Guest) Researcher, from March to September 2015, Department of Animal Breeding and Genetics, Centre for Veterinary Medicine and Animal Science (VHC), Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden.

PhD in Animal Genetics & Breeding (Systems Biology & Bioinformatics), from 2011, Animal Breeding and Genetics group, Department of Animal Science, Faculty of Agricultural Science & Engineering, College of Agriculture & Natural Resources (UTCAN), University of Tehran . Karaj, IRAN.

Ph.D Thesis: Computational strategies for integration of transcriptomic (RNA-Seq) data into animal genome-enabled predictions (Supervisor: Ardeshir Nejati Javaremi, Advisors: Ikhide Imumorin (Cornell University), Mostafa Ghaderi and Seyed Reza Miraei Ashtiani)

M.Sc. in Animal Genetics & Breeding. 1999-2002. Department of Animal Science, Faculty of Agriculture, University of Tehran. Karaj, IRAN.

M.Sc Thesis: Genetic variation within and between five Iranian sheep populations using microsatellites markers. (Supervisors: Dr. S. Esmailkhanian & Dr. S.R. Miraei Ashtiani and Advisor: Dr. M. Moradi Shahrabak).

B.Sc. in Animal Science. 1995-1999. Department of Animal Science, Faculty of Agriculture, University of Guilan. Rasht, IRAN.

Post secondary diploma in Veterinary Medicine. 1992-1995. Department of Veterinary Medicine, Faculty of Agriculture, Razi University. Kermanshah, IRAN.



EXECUTIVE EXPERIENCES

FAO National Coordinator on Animal Genetic Resources (AnGR), Since Jan. 2017

National Center for Management of Genetic Resources, Tehran, IRAN

Deputy of Research and Technology, Since Oct. 2017

Animal Science Research Institute of Iran (ASRI), Karaj, IRAN

Director of Technology Incubator and Innovation Center of Animal Science, Since Sep. 2019

Animal Research Institute of IRAN (ASRI), Karaj, IRAN

Head of Horse Identification and Registration Committee of Iran (HIRCI), Since Nov. 2018

Animal Research Institute of IRAN (ASRI), Karaj, IRAN

Head of Department (Animal Genetics and Breeding), Nov. 2009 to Oct. 2010

Animal Science Research Institute of Iran (ASRI), Karaj, IRAN

Head of Department (Biotechnology), Nov. 2009 to Oct. 2010

Animal Science Research Institute of Iran (ASRI), Karaj, IRAN

Vice President of Animal Genetics Branch (Board of Directors), Mar. 2014 to Mar. 2016

Iranian Genetics Society (IGS), Tehran, IRAN

Treasurer, Since Mar. 2019

Iranian Society of Animal Science (ISAS), Tehran, IRAN

Member of Scientific Board (Department of Biotechnology), Since Sep. 2006

Animal Science Research Institute of Iran (ASRI), Karaj, IRAN

Lab Expert (Department of Biotechnology), Apr. 2004 to Sep. 2006

Animal Science Research Institute of Iran (ASRI), Karaj, IRAN

Scientific Consultant (Department of Biotechnology), Sep. 2002 to Apr. 2004

Animal Science Research Institute of Iran (ASRI), Karaj, IRAN



PUBLICATION & PRESENTATIONS (*Papers in farsi have not been included*)

1. Bitaraf Sani, M., J. Zare Harofte, A. Bitaraf, S. Esmaeilkhanian, M.H. Banabazi, N. Salim, A. Teimoori, A. Shafei Naderi, M.A. Faghihi, P. Burger, M. Silawi, A. Taghipour Sheshdeh. 2020. Genome-Wide Diversity, Population Structure and Demographic History of Dromedaries in the Central Desert of Iran. *Genes* **11**: 599.
2. Salek Ardestani, S., M. Aminafshar, M.B. Zandi Baghche Maryam, **M.H. Banabazi**, M. Sargolzaei, Y. Miar. 2020. Whole-Genome Signatures of Selection in Sport Horses Revealed Selection Footprints Related to Musculoskeletal System Development Processes. *Animals* **10(1)**:53.
3. Salek Ardestani, S., M. Aminafshar, M.B. Zandi Baghche Maryam, **M.H. Banabazi**, M. Sargolzaei, Y. Miar. 2020. Signatures of selection analysis using whole-genome sequence data revealed novel candidate genes for pony and light horse types. *Genome*. doi:10.1139/gen-2020-0001
4. Canales Vergara A., V. Landi, J. Delgado Bermejo, A. Martínez, P. Cervantes Acosta, Á. Pons Barro, D. Bigi, P. Sponenberg, M. Helal, **M.H. Banabazi**, M. Camacho Vallejo. 2019. Tracing Worldwide Turkey Genetic Diversity Using D-loop Sequence Mitochondrial DNA Analysis. *Animals* **9(11)**: 897.
5. Canales Vergara A.M., V. Landi, J. Delgado Bermejo, A. Martínez, P. Cervantes Acosta, Á. Pons Barro, D. Bigi, P. Sponenberg, M. Helal, **M.H. Banabazi**, M.E. Camacho Vallejo. 2020. Design and development of a Multiplex microsatellite panel for the genetic characterization and diversity assessment of domestic turkey (*Meleagris gallopavo gallopavo*). *Italian Journal of Animal Science* **19(1)**: 392-398.
6. Lado S., J.P. Elbers, A. Doskocil, D. Scaglione, E. Trucchi, **M.H. Banabazi**, F. Almathen, N. Saitou, E. Ciani, P.A. Burger. Genome-wide diversity and global migration patterns in dromedaries follow ancient caravan routes. *Nature Communications Biology*. *In press*.
7. **Banabazi M.H.**, A. N. Javaremi, I. G. Imumorin, M. Ghaderi-Zefrei, S. R. Miraei Ashtiani. 2016. Single nucleotide polymorphisms (SNP) on transcriptome of Holstein cows shared with Illumina bovine SNP arrays. *Online Journal of Veterinary Research* **20(3)**:177-182.
8. Chessa B., F. Pereira, F. Arnaud, A. Amorim, F. Goyache, I. Mainland, R.R. Kao, J. M. Pemberton, D. Beraldi, M. Stear, A. Alberti, M. Pittau, L. Iannuzzi, **M.H. Banabazi**, R. Kazwala, Y.-P. Zhang, J.J. Arranz, B.A. Ali, Z. Wang, M. Uzun, M. Dione, I. Olsaker, L.-E. Holm, U. Saarma, S. Ahmad, N. Marzanov, E. Eythorsdottir, M. Holland, P. Ajmone-Marsan, M.W. Bruford, J. Kantanen, T.E. Spencer and M. Palmarini. 2009. Revealing the history of sheep domestication using retrovirus integrations. *Science* **324**: 532-536.
9. Almathen F., P. Charruau, E. Mohandesan, J.M. Mwacharo, P.O Wengel, D. Pitt, A.M. Abdussamad, M. Uerpmann, H.P. Uerpmann, B. De Cupere, P. Magee, M.A. Alnaqeeb, B. Salim, A. Raziq, T. Dessie, O. Abdelhadi, **M.H. Banabazi**, M. Al-Eknah, C. Walzer, B. Faye, M. Hofreiter, J. Peters, O. Hanotte and P.A. Burger. 2016. Ancient and modern DNA reveal dynamics of domestication and cross-continental dispersal of the dromedary. *PNAS* **113(24)**: 6707-6712.



10. Gharahdaghi, A.A., N. Asadi, and **M.H. Banabazi**. 2014. Genetic structure of Caspian Sea southern area honeybee populations, based on microsatellite polymorphism. *Journal of Livestock Science and Technologies* **2**(2):26-31.
11. Hashemi, M., C. Amirinia, M.H. Harkinezhad, **M.H. Banabazi**, A. Javanmard and F. Amiri. 2013. Validation of Pedigree Relationships Using a Multiplex Microsatellite Marker Assay in Iranian Holstein Cattle. *Annals of Animal Science* **13**: 481-493.
12. Canales Vergara A.M., V. Landi, E. Lasagna, S. ceccobelli, A. Martínez, M. Gomez, D. Bigi, P. Sponenberg, J.V. Delgado, M. Helal, **M.H. Banabazi**, Á. Pons, P. Cervantes, M.E. Camacho. Preliminary study of the genetic diversity of four regional Mexican turkey populations. *6th Mediterranean Poultry Summit. Torino, Italy, 18-20 June, 2018*.
13. Canales Vergara A.M., V. Landi, D. Bigi, **M.H. Banabazi**, P. Cervantes, J.V. Delgado, M. Gomez, G. Elyasi, M. Helal, A. Hernandez, E. Lasagna, A. Martínez, Á. Pons, P. Sponenberg, E. Camacho. Primeros resultados de biodiversidad y relaciones filogenéticas del Proyecto Bioturkey. *XIX Simposio Iberoamericano de Conservación y Utilización de Recursos Zoogenéticos (SICURZ). Riobamba, Ecuador, 22-26 June, 2018*.
14. Lopes Pinto F., **M.H. Banabazi**, A.M. Molin, E.R. Gilbert, C. Honaker, P. Siegel, G. Andersson, L. Andersson, D.J. de Koning, Mapping Parent-of-Origin Effects in the Chicken Transcriptome Using de-novo Transcriptome Assembly or Reference Genomes. *International Plant & Animal Genome XXIV. San Diego, CA, USA, 9-13 January, 2016*.
15. **Banabazi M. H.**, A. N. Javaremi, I. G. Imumorin, M. Ghaderi-Zefrei, S. R. Miraei Ashtiani, SNP calling on transcriptome applied in genome enabled predictions. *International Symposium on Animal Functional Genomics (ISAFG). Piacenza, Italy, 27-29 July, 2015*.
16. **Banabazi M.**, M. Ghaderi-Zefrehei, I.G. Imumorin, S.O. Peters, M. De Donato, A. N. Javaremi, Whole Transcriptome Value Index (WTVI): A Methodology for Integrating Functional Sequences from RNA-Seq Data into Animal Selection. *International Plant & Animal Genome XXI. San Diego, CA, USA, 12-16 January, 2013*.
17. Seyedabadi H.R., **M.H. Banabazi**, F. Afraz, N. Asadzadeh, A. Javanmard and A. Javanrouh Aliabad. 2011. Molecular investigation on DNA-PKcs gene and identification of SCID carriers among Iranian arabian horses using a test based on PCR. *Journal of Animal and Veterinary Advances*. **10** (7): 865-867.
18. Maghsoodi S.M., S.R. Miraei Ashtiani , **M.H. Banabazi**, H. Mehrabani Yeganeh. 2011. The comparison of genetic susceptibility to bovine spongiform encephalopathy among Iranian Holstein (*Bos taurus*) and two Iranian local cattle populations (*Bos Indicus*) based on PRNP polymorphisms. *Iranian Journal of Biotechnolog*. **9**: 115-119.
19. Karami M., C. Amirinia, N. E.J.Kashan, N. Amirmozafari, M. Chamani and **M.H. Banabazi**. 2011. Polymorphisms of the prion protein gene Arabi sheep breed in IRAN. *African Journal of Biotechnology* **10**: 15819-15822.



20. Zamani P., M. Akhondi, M.R Mohammadabadi, A.A. Saki, A. Ershadi, **M.H. Banabazi** and A.R. Abdolmohammadi. 2011. Genetic variation within Mehraban sheep population using two inter-simple sequence repeat (ISSR) markers. *African Journal of Biotechnology* **10**: 1812-1817.
21. Esmaeilkhanian S. and **M.H. Banabazi**. 2006. Genetic Variation Within And Between Five Iranian Sheep Populations Using Microsatellites Markers. *Pakistan Journal of Biological Sciences* **9**: 2488-2492.
22. Amirinia C., H.R. Seyedabadi, **M.H. Banabazi** and M.A. Kamali. 2007. Bottleneck Study and Genetic Structure of Iranian Caspian Horse Population Using Microsatellites. *Pakistan Journal of Biological Sciences* **10**: 1540-1543.
23. Seyedabadi H.R., C. Amirinia, **M.H. Banabazi** and H. Emrani. 2006. Parentage verification of Iranian Caspian horse using microsatellites markers. *Iranian Journal of Biotechnology*. **4**: 260-264.
24. Javanmard A., N. Asadzadeh, **M.H. Banabazi**, and J. Tavakolian. 2005. The allele and genotype frequencies of bovine pituitary-specific transcription factor and leptin genes in Iranian cattle and buffalo populations using PCR-RFLP. *Journal of Animal Science*. **84** (Suppl. 1). 169 (T22).
25. Burger P.A., P. Charruau, D. Enkhbileg, Y. Adiya, L. Yuan, H. Jianlin, **M. Banabazi** and C. Walzer. From the Bush to the Genome: Genetic Identification of the Last Wild Old World Camel Species (*Camelus Ferus*). *The 3rd Conference of the International Society of Camelid Research and Development. Muscat, Sultanate of Oman, 29th January - 1st February, 2012*.
26. Charruau, P., P. Kaczensky, L. Yuan, A. Yadamsuren, E. Dulmatseren, H. Jianlin, **M. Banabazi**, C. Walzer and P. Burger. Hybridisation in Old World camelids: a big threat for the last Wild camels (*Camelus ferus*). *The 8th International Conference on Behaviour, Physiology and Genetics of Wildlife. Berlin, Germany 14-17 September, 2011*.
27. **Banabazi M.H.**, Maghsoodi S.M., S.R. Miraei Ashtiani and H. Mehrabani Yeganeh. 2011. Genetic Resistance to BSE based on Polymorphism of Prion Protein Gene (PRNP) in Iranian cattle populations. *The course "Advances in the knowledge of parasite resistance of ruminant hosts and parasites". Embrapa Pecuíria Sudeste/ Embrapa Cattle-Southeast, Fazenda Canchim, São Carlos, SP, Brazil. September 26th to October 7th, 2011*.
28. Asadi N., S. Khederzadeh, C. Amirinia and **Banabazi M.H.** Genetic structure of migratory colonies of *Apis florae* (hymenoptera: Apidae) from south-eastern IRAN. *Global conference on Entomology (GCE). Chiang Mai, Thailand 5-9 March, 2011*.
29. **Banabazi M.H.**, A. Javanmard, N. Asadzadeh, and H.R.. Seyedabadi. Sex verification of arab horses using PCR-RFLP within ZFX/ZFY gene. *The 8th World Congress on Genetics Applied to Livestock Production. Belo Horizonte, MG, Brazil 13-18 August, 2006*.
30. Seyedabadi H.R., F. Afraz, **M.H. Banabazi**, and H. Emrani. Identification of SCID carriers among Iranian arab horses using a test based on PCR for DNA-PKcs gene. *The 8th World Congress on Genetics Applied to Livestock Production. Belo Horizonte, MG, Brazil 13-18 August, 2006*.
31. Asadzadeh N., A. Javanmard, **M.H. Banabazi**, and F. Sarhadi. The effects of polymorphism of growth hormone gene on semen characteristics in Iranian Holstein bulls. *The 8th World Congress on Genetics Applied to Livestock Production. Belo Horizonte, MG, Brazil 13-18 August, 2006*.



32. Asadzadeh, N., F. Sarhadi, A. Javanmard, **M.H. Banabazi** and K. Khaledi. Association between GH Encoding Gene Polymorphism and Semen Characteristics in Iranian Holstein Bulls. *The 58th Annual Meeting of the European Association for Animal Production. Dublin, Ireland 26 -29 August, 2007.*
33. Emrani H., F. Radjaee Arbabi, C. Amirinia, **M.H. Banabazi**, A. Nejati Javaremi, A. Javanrouh, H.R. Seyedabadi, A. Abbasi and A. Masoudi. Bottleneck effect in four Japanese quail strains based on assign test using ten microsatellite loci. *The 57th Annual Meeting of the European Association for Animal Production. Antalya, Turkey 17-20 September 2006.*
34. Javanrouh A., **M.H. Banabazi**, S. Esmaeilkhani, C. Amirinia, H.R. Seyedabadi and H. Emrani. Optimization on salting out method for DNA extraction from animal and poultry blood cells. *The 57th Annual Meeting of the European Association for Animal Production. Antalya, Turkey 21-25 August 2006.*
35. Asadzadeh N., A. Torkamanzehi, A. Javanmard, **M.H. Banabazi**, J. Tavakolian. DNA Polymorphism of bovine pituitary-specific transcription factor and leptin gene in Iranian Bos indicus and Bos Taurus cattle using PCR-RFLP. *The 57th Annual Meeting of the European Association for Animal Production. Antalya, Turkey 21-25 August 2006.*
36. Aminafshar M., C. Amirinia, R. Vaez Torshizi, **M.H. Banabazi**, M. Hosseinpour Mashhadi, S. Khederzadeh and L. Jamsi. Genetic diversity analyzed by microsatellite markers among northern populations of the Iranian buffalo. *The XX International Congress of Genetics. Berlin, Germany July 12 – 17, 2008.*
37. **Banabazi M.H.**, S.R. Miraei Ashtiani and S. Esmaeelkhani. Phylogenetic relationship and divergence time between two Iranian Kordi sheep populations using microsatellite markers. *The 56th Annual Meeting of the European Association for Animal Production. Uppsala, Sweden 21-25 August 2005.*
38. **Banabazi M.H.**, Esmaeelkhani, S., Miraei Ashtiani, S.R. and Moradi Shahrabak, M. 2003. Genetic variation within and between five Iranian sheep populations using microsatellites markers. 2003. *British Society of Animal Science. York, United Kingdom. 141.*
39. Shokri F., S. Esmaeilkhani, M.T. Nasiri, **M.H. Banabazi** and J. Fayazi. Study of microsatellite markers in Isfahan native chickens by PCR. *The 9th Iranian Congress of Biochemistry & the 2nd International Congress of Biochemistry and Molecular Biology. Shiraz, IRAN. October 29- November 1 2007.*



COURSES

- 1.** TCM workshop: “From Disease to Sequence and Protein Structure”, Centre for Veterinary Medicine and Animal Science (VHC), Swedish University of Agricultural Sciences, Uppsala, Sweden. April 2015.
- 2.** Advances in the knowledge of parasite resistance of ruminant hosts and parasites. Embrapa Pecuária Sudeste/ Embrapa Cattle-Southeast, Fazenda Canchim, São Carlos, SP, Brazil. September 26th to October 7th, 2011.
- 3.** Molecular characterization of small ruminant genetic resources of CWANA. ICARDA, Aleppo, Syria. April 2007.
- 4.** Applications of computer simulation in animal breeding and genetics. ASRI, Karaj, IRAN. December 2009.
- 5.** R packages applied in animal breeding and genetics. ASRI, Karaj, IRAN. October 2012.
- 6.** Animal Genomic Selection using R Software. Dept. of Biotechnology, Animal Science Research Institute of IRAN (ASRI), Karaj, IRAN. 21 -23 November 2010.
- 7.** Application of Molecular Markers in Animal Breeding. Dept. of Biotechnology, Animal Science Research Institute of IRAN (ASRI), Karaj, IRAN. 9-14 January 2005.
- 8.** Animal Breeding Using Molecular Methods. National Institute for Genetic Engineering & Biotechnology (NIGEB), Tehran, IRAN. 3-7 January 2004.
- 9.** Visual Basic Programming. ASRI, Karaj, IRAN. October 2008.
- 10.** Real-Time PCR Workshop. Cinnagen Company, Karaj, IRAN. January 2005.
- 11.** Application of R Software in Bioinformatics Calculations. Agricultural Biotechnology Research Institute of IRAN (ABRII), Karaj, IRAN. 14-16 June 2010.
- 12.** Statistical Analysis of DNA Microarray Data in order to Finding of Different Expressed Genes. Agricultural Biotechnology Research Institute of IRAN (ABRII), Karaj, IRAN. 19-21 July 2010.
- 13.** Microarray Data Analysis. IRAN’s Bioinformatics Society, University of Tehran, IRAN. 21-23 May 2006.
- 14.** Lentiviral gene transfer to Mesenchymal stem cells. National Institute for Genetic Engineering & Biotechnology (NIGEB), Tehran, IRAN. 18-20 December 2010.



HONORS & AWARDS

- 1.** The 1st rank in the national PhD test on Animal Genetics and Breeding. 2011-2012. *University of Tehran, Karaj, IRAN.*
- 2.** The 1st rank in the national PhD test on Animal Genetics and Breeding. 2011-2012. *University of Guilan, Rasht, IRAN.*
- 3.** The Best Young Researcher of AREEO. 2010. *Agricultural Research, Education and Extension Organization of IRAN (AREEO), Tehran, IRAN.*
- 4.** The Best Researcher of ASRI. 2007. *Animal Science Research Institute of IRAN (ASRI), Karaj, IRAN.*
- 5.** Top Student of Animal Sciences (average 16.98 Of 20 ranked as 1st). 1999. *University of Guilan, Rasht, IRAN.*
- 6.** Top Student of Veterinary Medicine (average 18.5 of 20 ranked as 1st). 1995. *University of Razi, Kermanshah, IRAN.*
- 7.** Scholarship offer covering tuition and health insurance valued at \$22,420 per year and over 3 years (total \$68,000) for PhD course in Animal Genetics. 2009. *Cornell University, Ithaca, New York, USA.*
- 8.** The International Postgraduate Research Scholarship (IPRS) offer covering tuition fees and student health fees with a living allowance of AUD \$22,860 per annum for up to three years with a possible six months extension for PhD course in Animal Genetics. 2011. *University of Tasmania, Hobart, Tasmania, Australia.*
- 9.** Allowance (full cover) for participating in course of "Advances in the knowledge of parasite resistance of ruminant hosts and parasites". 2011. *Embrapa Pecuária Sudeste, São Carlos, SP, Brazil.*
- 10.** Allowance (full cover) for participating in course of "Molecular characterization of small ruminant genetic resources of CWANA". 2007. *ICARDA, Aleppo, Syria.*
- 11.** Fund offer covering travel and housing expenses, registration fee and a subsistence allowance of 24€/day) to support participation in "The Research program on the Mathematics of Biodiversity" & "The Exploratory Conference on the Mathematics of Biodiversity". 2012. *Centre de Recerca Matemàtica (CRM), Bellaterra, Barcelona, Spain.*



SOCIETIES

1. Iranian Genetic Society (IGS)
2. Iranian Biotechnology Society (IBS)
3. Iranian Society of Animal Science (ISAS)

RESEARCH INTERESTS

1. Computational Biology
2. Animal Genomics
3. Epigenomics
4. Population and Evolutionary Genomics
5. Genetics of Resilience
6. Conservation Genomics
7. Nutritional Genomics

LANGUAGES

1. Persian (Farsi) as native
2. English (PBT TOEFL scored 540 – August 2010 & IELTS scored 6.0 – February 2011)

Last update: January 2020

