

BEN BEHESHTI, M.D., PH.D., FRCPC
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Education & Awards

2015	Clinical Assistant Professor , University of British Columbia
July 2011-2013	FRCPC , General Internal Medicine Fellowship programme, University of British Columbia
February 2008	Transferred to Internal Medicine Programme (PGY1)
July 2006	Resident, Department of Pathology, University of Toronto (PGY1)
June 2006	M.D. , Faculty of Medicine, University of Toronto.
January 2004	George Brown Memorial Award for Basic Science category, Medical Student Research Day, University of Toronto.
Summer 2003	University of Toronto Medical Student Summer Research Scholarship (Supervisor: Dr. J.A. Squire).
September 2002	Enrolment in the M.D. programme , Faculty of Medicine, University of Toronto.
November 2002	Ph.D. , cancer genetics and cytogenetics (Supervisor: Dr. J.A. Squire): “Chromosomal basis of prostate cancer oncogenesis”; Department of Laboratory Medicine & Pathobiology, University of Toronto.
2002	Dutkevitch Travel Award, University of Toronto; \$500.
2001	Paul Starita Fellowship, University of Toronto; \$19,030.
2001	University of Toronto Open Fellowship; \$10,000 (declined).
2001	Dutkevitch Travel Award, University of Toronto; \$500.
2000	Princess Margaret Hospital Foundation Graduate Fellowship; \$7,000.
2000	University of Toronto Open Fellowship; \$4,000.
2000	Dutkevitch Travel Award, University of Toronto; \$500.
September 1999	Reclassified into the Ph.D. programme (Supervisor: Dr. J.A. Squire); Department of Laboratory Medicine and Pathobiology, Faculty of Medicine, University of Toronto.
1999	Paul Starita Fellowship, University of Toronto; \$7,289.
1999	Dutkevitch Travel Award, University of Toronto; \$500.
1999	University of Toronto Open Fellowship; \$4,000.
January 1998	Enrolment in the M.Sc. programme (Supervisor: Dr. J.A. Squire); Department of Laboratory Medicine & Pathobiology, Faculty of Medicine, University of Toronto.
1997	Hon. B.Sc. Physiology , Minor in Microbiology; University of Toronto.
1993 - 1997	Enrolment in the B.Sc. programme ; at Trinity College, Faculty of Arts & Sciences, University of Toronto.
1993	Pat Strathy Scholarship at Trinity College; \$1,000.
1993	Ontario Scholar.
1988 - 1993	Attendance at Upper Canada College, Toronto, Canada.

Research Experience

Papers:

1. A.H. Girgis, V.V. Iakovlev, **B. Beheshti**, J. Bayani, J.A. Squire, A. Bui, M. Mankaruos, Y. Youssef, B. Khalil, H. Khella, M. Pasic, G.M. Yousef. Multilevel whole-genome analysis reveals candidate biomarkers in clear cell renal cell carcinoma. *Cancer Res.* Oct; 72(20):5273-84, 2012.
2. Y. Lu, X. Zhang, **B. Beheshti**, J. Zhang. Adenoviral-mediated pHyde gene transfer and cisplatin additively inhibit human prostate cancer growth by enhancing apoptosis. *Prostate.* Feb; 69(3):234-48, 2009.
3. B. Vukovic, **B. Beheshti**, P.C. Park, G. Lim, J. Bayani, M. Zielenska, J.A. Squire. Correlating breakage-fusion-bridge events with the overall chromosomal instability and *in vitro* karyotype evolution in prostate cancer. *Cytogenet Genome Res.* 116(1-2):1-11, 2007
4. W.K. Ip, P.B. Lai, N.L. Wong, S.M. Sy, **B. Beheshti**, J.A. Squire, N. Wong. Identification of PEG10 as a progression related biomarker for hepatocellular carcinoma. *Cancer Lett.* Jun; 250(2):284-91, 2006.
5. K.Y. Chan, P.B. Lai, J.A. Squire, **B. Beheshti**, N.L. Wong, S.M. Sy, N. Wong. Positional expression profiling indicates candidate genes in deletion hotspots of hepatocellular carcinoma. *Mod Pathol.* Dec; 19(12):1546-54, 2006.
6. S.M. Hughes, M. Yoshimoto, **B. Beheshti**, R.S. Houlston, J.A. Squire, A. Evans. The use of whole genome amplification to study chromosomal changes in prostate cancer: insights into genome-wide signature of preneoplasia associated with cancer progression. *BMC Genomics.* Mar; 7:65, 2006.
7. L. Begley, D. Keeney, **B. Beheshti**, J.A. Squire, R. Kant, H. Chahib, J.W. Macdonald, J. Rhim, J.A. Macoska. Concordant copy number and transcriptional activity of genes mapping to derivative chromosome 8 during cellular immortalization *in vitro*. *Genes Chromosomes Cancer.* Feb; 45(2):136-46, 2006.
8. M. Bernardini, C.-H. Lee, **B. Beheshti**, M. Prasad, M. Albert, P. Marrano, H. Begley, P. Shaw, A. Covens, J. Murphy, B. Rosen, S. Minkin, J.A. Squire, P.F. Macgregor. High-Resolution Mapping of Genomic Imbalance and Identification of Gene Expression Profiles Associated With Differential Chemotherapy Response in Serous Epithelial Ovarian Cancer. *Neoplasia.* June; 7(6):603-13, 2005.
9. E. Pang, Y. Hu, K.Y. Chan, P.B. Lai, J.A. Squire, P.F. Macgregor, **B. Beheshti**, M. Albert, T.W. Leung, N. Wong. Karyotypic imbalances and differential gene expressions in the acquired doxorubicin resistance of hepatocellular carcinoma cells. *Lab. Invest.* May; 85(5):664-74, 2005.

10. N. Wong, K.Y. Chan, P.F. Macgregor, P.B. Lai, J.A. Squire, **B. Beheshti**, M. Albert, T.W. Leung. Transcriptional profiling identifies gene expression changes associated with IFN-alpha tolerance in hepatitis C-related hepatocellular carcinoma cells. *Clin Cancer Res.* Feb 1; 11(3):1319-26, 2005.
11. G. Lim, J. Karaskova, **B. Beheshti**, B. Vukovic, J. Bayani, S. Selvarajah, S.K. Watson, W.L. Lam, M. Zielenska, J.A. Squire. An integrated mBAND and submegabase resolution tiling set (SMRT) CGH array analysis of focal amplification, microdeletions, and ladder structures consistent with breakage-fusion-bridge cycle events in osteosarcoma. *Genes Chromosomes Cancer.* April; 42(4):392-403, 2005.
12. K.Y. Chan, N. Wong, P.B. Lai, J.A. Squire, P.F. Macgregor, **B. Beheshti**, M. Albert, K.F. To, P.J. Johnson. Transcriptional profiling on chromosome 19p indicated frequent downregulation of ACP5 expression in hepatocellular carcinoma. *Int. J. Cancer.* May 10;114(6):902-8, 2005.
13. Y. Hu, E. Pang, P.B. Lai, J.A. Squire, P.F. Macgregor, **B. Beheshti**, M. Albert, T.W. Leung, N. Wong. Genetic alterations in doxorubicin-resistant hepatocellular carcinoma cells: A combined study of spectral karyotyping, positional expression profiling and candidate genes. *Int. J. Oncol.* November; 25(5):1357-64, 2004.
14. J.A. Macoska, P. Paris, C. Collins, A. Andaya, **B. Beheshti**, H. Chaib, R. Kant, L. Begley, J.W. MacDonald, J.A. Squire. Evolution of 8p loss in transformed human prostate epithelial cells. *Cancer Genetics and Cytogenetics.* Oct 1; 154(1):36-43, 2004.
15. G. Lim, J. Karaskova, B. Vukovic, J. Bayani, **B. Beheshti**, M. Bernardini, J.A. Squire, M. Zielenska. Combined spectral karyotyping, multicolor banding, and microarray comparative genomic hybridization analysis provides a detailed characterization of complex structural chromosomal rearrangements associated with gene amplification in the osteosarcoma cell line MG-63. *Cancer Genetics and Cytogenetics.* September; 153(2):158-63, 2004.
16. M. Zielenska, P. Marrano, P. Thorner, J. Pei, **B. Beheshti**, M. Ho, J. Bayani, Y. Liu, B.C. Sun, J.A. Squire, X.-S. Hao. High-resolution cDNA microarray CGH mapping of genomic imbalances in osteosarcoma using formalin-fixed paraffin-embedded tissue. *Cytogenetic and Genome Research.* 107(1-2):77-82, 2004.
17. S. Hughes, G. Lim, **B. Beheshti**, J. Bayani, P. Marrano, A. Huang, J.A. Squire. Use of Whole Genome Amplification and Comparative Genomic Hybridisation to detect chromosomal copy number alterations in cell line and patient material. *Cytogenetic and Genome Research.* 105(1):18-24, 2004.
18. J.A. Squire, J. Pei, P. Marrano, **B. Beheshti**, J. Bayani, G. Lim, L. Muresan, M. Zielenska. High-resolution mapping of amplicons on chromosome 8 and 17 in pediatric osteosarcoma using CGH analysis of cDNA microarrays. *Genes Chromosomes and Cancer* November; 38(3):215-25, 2003.

19. B. Vukovic, P.C. Park, J. Al-Maghrabi, **B. Beheshti**, J. Sweet, A. Evans, J. Trachtenberg, J.A. Squire. Evidence of multifocality of telomere erosion in high grade prostatic intraepithelial neoplasia (HPIN) and concurrent carcinoma. *Oncogene* April 3; 22(13):1978-87, 2003.
20. **B. Beheshti**, I. Braude, P. Marrano, P. Thorner, M. Zielenska, J.A. Squire. Chromosomal localization of DNA amplifications in neuroblastoma tumors using cDNA microarray CGH. *Neoplasia* January-February; 5(1):53-62, 2003.
21. **B. Beheshti**, B. Vukovic, P. Marrano, J.A. Squire, P.C. Park. Resolution of genotypic heterogeneity in prostate tumors using DOP-PCR and CGH on microdissected carcinoma and PIN foci. *Cancer Genetics and Cytogenetics* August; 137(1):15-22, 2002.
22. J. Bayani, J.D. Brenton, P.F. Macgregor, **B. Beheshti**, M. Albert, D. Nallainathan, J. Karaskova, B. Rosen, J. Murphy, S. Laframboise, B. Zanke, J.A. Squire. Parallel analysis of sporadic primary ovarian carcinomas by spectral karyotyping, comparative genomic hybridization and expression microarrays. *Cancer Research*. June 15; 62(12):3466-3476, 2002.
23. P.C.M. Larsson, **B. Beheshti**, R. Shipman, M.A.S. Jewett. Allelic deletion analysis of multiple bladder tumours. *UroOncology*. 1:291-295, 2001.
24. **B. Beheshti**, P.C. Park, J. Sweet, J. Trachtenberg, M.A.S. Jewett, J.A. Squire. Evidence of chromosomal instability in prostate cancer cell lines and early stage patients by fluorescence *in situ* hybridization and spectral karyotyping. *Neoplasia*. January-February; 3(1):62-69, 2001.
25. P.C.M. Larsson, **B. Beheshti**, H.A. Sampson, M.A.S. Jewett, R. Shipman. Allelic deletion fingerprinting of Urine Cell Sediments in Bladder Cancer. *Molecular Diagnosis*. September; 6(3):181-188, 2001.
26. J.A. Macoska, **B. Beheshti**, J.S. Rhim, B. Hukku, J. Lehr, K.J. Pienta, J.A. Squire. Genetic characterization of immortalised prostate epithelial cell cultures: evidence for structural rearrangements of chromosome 8 and i(8q) chromosome formation in malignant-derived cells. *Cancer Genetics and Cytogenetics* July 1; 120(1):50-7, 2000.
27. **B. Beheshti**, J. Karaskova, P.C. Park, J.A. Squire, B.G. Beatty. Identification of a high frequency of chromosomal rearrangements in the centromeric regions of prostate cancer cell lines by sequential Giemsa-banding and spectral karyotyping. *Molecular Diagnosis* March; 5(1):23-32, 2000.
28. D.M. Heritz, J-M. Lacroix, S.D. Batra, K.A. Jarvi, **B. Beheshti**, M.W. Mittelman. Detection of eubacteria in interstitial cystitis by 16S rDNA amplification. *Journal of Urology* December; 158(6): 2291-2295, 1997.

29. D. Davidson, **B. Beheshti**, M.W. Mittelman. Effects of *Arthrobacter sp.*, *Acidovorax delafieldii*, and *Bacillus megaterium* Colonization on Copper Solvency in a Laboratory Reactor. *Biofouling* 9(4): 279-92, 1996.

Book Chapters:

1. S. Hughes, **B. Beheshti**, P. Marrano, G. Lim, J.A. Squire. "Comparative Genomic Hybridization Analysis using Metaphase or Microarray Slides". In: M.A. Hayat (Ed.), Immunohistochemistry and In situ hybridization of human carcinomas: Molecular Pathology, Colorectal Carcinoma, and Prostate Carcinoma (volume 2). Academic Press, January 30; pages 11-22, 2005. ISBN: 0123339421.
2. Y. Lu, **B. Beheshti**, J. Zhang, J.A. Squire, X.J. Yang, S.K. Bhattacharya, L.K. Jennings. "Characterization of a novel apoptosis-inducing gene in prostate cancer". In: J.N. Lucas (Ed.), Prostate Cancer. Nova Science Publishers, Inc.: Hauppauge, NY. December; pp23-50, 2004. ISBN: 1594541000.
3. **B. Beheshti**, P.C. Park, I. Braude, J.A. Squire. "Microarray CGH". In: Y.-S. Fan (Ed.). Methods Mol Biol. September; 204:191-207, 2002. ISBN: 1592593003.
4. P.C. Park, **B. Beheshti**, J.A. Squire. "Microarray Technology in Cancer". In: E.P. Diamandis, H.A. Fritsche, H. Lilja, D.W. Chan, M.K. Schwartz (Ed.), Tumor Markers: Physiology, Pathobiology, Technology and Clinical Applications: American Association for Clinical Chemistry Press. January; pp 383-390, 2002. ISBN: 1890883719.

Posters & Abstracts (abbreviated):

1. **B. Beheshti**, B. Vukovic, S. Hughes, S.K. Watson, A.S. Ishkanian, W.L. Lam, J.A. Squire. High resolution genomic analysis of prostate cancer using CGH arrays and molecular cytogenetic methods. Proceedings of the 95th Annual Meeting of the American Association for Cancer Research. Orlando, March 2004. Abstract #3435.
2. S.K. Watson, A.S. Ishkanian, **B. Beheshti**, J.A. Squire, W.L. Lam. Characterization of Copy Number Alterations in Prostate Cancer Cell Lines Using a 77kb Resolution Whole Genome DNA Microarray by Comparative Genomic Hybridization. Proceedings of the 95th Annual Meeting of the American Association for Cancer Research. Orlando, March 2004. Abstract #2842.
3. **B. Beheshti**, I. Braude, P.C. Park, P. Marrano, M. Zielenska, J.A. Squire. Array CGH and informatics approaches for high-throughput analysis of DNA copy number changes in solid tumors. Proceedings of the 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, April 2002. 43:299.

4. J. Pei, P. Marrano, **B. Beheshti**, G. Lim, N. Fabricius, I. Burgetz, J.A. Squire, M. Zielenska. Subregional mapping gene amplification at chromosome band 17p11-13 by CGH array analysis in osteosarcoma. Proceedings of the 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, April 2002. 43:297.
5. B. Vukovic, J. Al-Maghrabi, P.C. Park, **B. Beheshti**, J.A. Squire. Role of telomere length and chromosomal instability in prostate cancer tumorigenesis and genotypic heterogeneity. Proceedings of the 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, April 2002. 43:841.
6. R. Kant, E.K. Cockrell, M.A. Rubin, **B. Beheshti**, J.A. Squire, A. Powell, J. Rhim, J.A. Macoska. Paracrine interactions modulate phenotypic and genotypic expression in transformed prostatic epithelial cells. Proceedings of the 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, April 2002. 43:1054.
7. Y. Lu, **B. Beheshti**, J.A. Squire, X.J. Yang. Cloning and characterization of a novel apoptosis-inducing gene that inhibits prostate cancer cell growth. Proceedings of the 93rd Annual Meeting of the American Association for Cancer Research. San Francisco, April 2002. 43:91.
8. **B. Beheshti**, P.C. Park, C. Lu, I. Braude, C. Platt, K. Kwon, J. Woodgett, J.A. Squire. Analysis of Chromosome 8p23.2 in Prostate Cancer by *in silico* Study of Biological Databanks and High-Resolution Comparative Genomic Hybridization on DNA Microarrays. Proceedings of the 92nd Annual Meeting of the American Association for Cancer Research. New Orleans, March 2001. 42:67.

Invited Lectures:

1. Invited speaker, Gamma-Dynacare: Passport to Knowledge Workshop, Toronto, Ontario, Canada (October, 2002).
2. Invited speaker, Summer Student Research Program, The Hospital for Sick Children, Toronto, Canada (July, 2001).
3. Invited speaker, Summer Student Research Program, The Hospital for Sick Children, Toronto, Canada (July, 2000).

Graduate Research Reference

c/o Dr. J.A. Squire (Ph.D. thesis supervisor)

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<http://cancyto.path.queensu.ca/>

Microarray analysis software: <http://individual.utoronto.ca/beheshti/software/>