

**CURRICULUM VITAE**

Min Pi, Ph.D

**Current Academic Rank:** Research Associate Professor**EDUCATION:****Undergraduate:**

09/1979 – 07/1983 B.S., University of Fudan, Shanghai, China  
Major: Genetics

**Graduate/Professional School:**

04/1991 – 03/1994 M.S., University of Tsukuba, Tsukuba, Japan  
Major: Biochemistry and Biophysics

04/1994 – 03/1998 Ph.D, University of Tsukuba, Tsukuba, Japan  
Major: Biochemistry and Biophysics

**Postgraduate Education:**

10/1997 - 04/2002 Postdoctor, Duke University Medical Center, Durham, NC  
Area of Study: Calcium Sensing Mechanism in Bone

**HONOR:**

The ASBMR John Haddad, Jr., Young Investigator Awards, April, 2003

**PROFESSIONAL TRAINING:**

An Organ Systems Approach to Experimental Targeting of the Metabolic Syndrome, Vanderbilt University Medical Center, July 18-28, 2011

Sponsors: National Institute of General Medical Sciences (GM086771) and Vanderbilt Diabetes Research Training Center (DK020593) and the Vanderbilt Mouse Metabolic Phenotyping Center (DK059637)

**UNIVERSITY (AND COLLEGE) APPOINTMENTS:**

11/2009 – Present Research Associate Professor. Department of Medicine, University of Tennessee Health Science Center, Memphis, TN

- Generating and characterized *Gprc6a* tissue specific knockout mice (pancreatic beta-cells, muscle, fat, bone, brain).
- Investigate the functional role of GPRC6A in prostate cancer cell proliferation, progression and metastasis.
- Investigate the function of GPRC6A in mouse glucose and lipid metabolism, energy balance, cardiovascular homeostasis or animal behavior in vivo and in vitro.

07/2009 – 11/2009 Research Associate Professor. Department of Medicine, University of Kansas Medical Center, Kansas City, KS

- Characterized a novel GPCR, GPRC6A biological function and signal transduction pathway in vitro.
- Investigated and characterized *Gprc6a* null mice.

- 02/2004 – 06/2009 Research Assistant Professor. Department of Medicine, University of Kansas Medical Center, Kansas City, KS
- Investigated the calcium sensing mechanism in bone.
  - Investigated the biological function and signal transduction pathway of classic calcium sensing receptor.
- 05/2002 – 02/2004 Research Assistant Professor. Department of Medicine, Duke University Medical Center, Durham, NC
- Investigated the calcium sensing mechanism in bone.
- 12/1996 – 09/1997 Research Assistant. Institute of Biological Sciences, University of Tsukuba, Tsukuba, Japan
- 12/1985 – 09/1989 Staff Instructor. Department of Biology, Fujian Normal University, Fuzhou, China
- 08/1983 – 11/1985 Research Assistant. Institute for the Application of Atomic Energy, Chinese Academy of Agricultural Sciences, Beijing, China

**PROFESSIONAL SOCIETIES AND AFFILIATIONS:**

<b>Year</b>	<b>Organization (including offices held)</b>
1987-Present	The Chinese Society for Genetics
1987-1989	The Chinese Society for Cell Biology
1992-1997	The Botanical Society of Japan
1994-1997	The Molecular Biology Society of Japan
1999-Present	The American Society for Bone and Mineral Research
1999-Present	Federation of American Societies for Experimental Biology

**SUPERVISION OF POSTDOCTORAL FELLOWS:**

<b>Year</b>	<b>Postdoc and Fellow Name</b>	<b>Area of Study</b>
2002—2003	Qusheng Tu, M.D., Ph.D	Calcium Sensing Mechanism in Bone and Osteoblastic Cells
2003—2004	Peng Fu, M.D., Ph.D	Calcium Sensing Mechanism in Bone and Osteoblastic Cells
2004—2007	Qiang Luo, M.D., Ph.D	In vivo Assessment of Calcium Sensing receptor Signaling Mechanism
2004—2005	Nan He, Ph.D	In vivo Assessment of Calcium Sensing receptor Signaling Mechanism
2005---2006	Brian Ringhofer, M.D.	The Novel Calcium Sensing Receptor in Bone and Kidney
2007—2010	Junhui Chen, M.D., Ph.D	In vivo Assessment of Calcium Sensing receptor Signaling Mechanism
2009---2010	Christian Richard, Ph.D.	The Role of GPRC6A and Ligands Screening
2012---2013	Sahar Zaidi, M.D.	GPRC6A, a Novel Regulator of Prostate Cancer Progression

**REVIEWER FOR JOURNAL:**

Kidney International  
Life Sciences  
Carcinogenesis

**GRANTS AND CONTRACTS:**Activating Research Support

<b>Principal Investigator</b>	<b>Co-Investigator</b>	<b>Title of Grant</b>	<b>Source</b>	<b>Year Direct Costs</b>	<b>Funding Years</b>
L. D. Quarles	<u>Min Pi</u>	Discovery of an Osteocalcin Sensing GPCR Regulated beta-Cell function	NIH 1R01DK09581 2-01A1	230,000	2013-2017
L. D. Quarles	<u>Min Pi</u>	Role of FGFRs in FGF-23 Associated Left Ventricular Hypertrophy	Amgen	125,000	2012-2014
L. D. Quarles	<u>Min Pi</u>	GPRC6A mediates the effect of osteocalcin on insulin secretion and sensitivity	ADA	51,000	2013-2014

Pending Research Support:

<b>Principal Investigator</b>	<b>Co-Investigator</b>	<b>Title of Grant</b>	<b>Source</b>	<b>Year Direct Costs</b>	<b>Funding Years</b>
<u>Min Pi (Co-PI)</u> Ken Nishimoto		Insulin sensitivity and glucose utilization in skeletal muscle: regulation by the osteocalcin receptor GPRC6A	NIH R21 PA-12-209	125,000	2014-2016

Completed Research Support:

<b>Principal Investigator</b>	<b>Co-Investigator</b>	<b>Title of Grant</b>	<b>Source</b>	<b>Year Direct Costs</b>	<b>Funding Years</b>
<u>Min Pi</u>		In vivo of Calcium Sensing receptor Signaling Mechanism	NIH-COBRE P20 RR017686	\$145,000	2005-2007
L. D. Quarles	<u>Min Pi</u>	Isolation and Cloning of the Osteoblastic Calcium Sensing Receptor: ObCasR	Japan-Tobacco		2001-2002
L. D. Quarles	<u>Min Pi</u>	Effects of strontium ranelate on bone formation in wild-type and in double homozygous CasR- and Gcm2- deficient mice	INSTITUT de RECHERCHE INTERNATIONAL SERVIER (FRANCE)	\$180,000	2005-2007
L. D. Quarles	<u>Min Pi</u>	Extracellular Calcium-Sensing Receptors in Osteoblasts	NIH RO1- AR037308-24	\$250,000	2001-2005
L. D. Quarles	<u>Min Pi</u>	Calcium sensing receptor in bone	NIH	\$250,000	2006-2010

**SCHOLARLY PUBLICATIONS:**

1. Zen, D, Pi, M.: The application of plant root-tip micronucleus and tetrad micronuclei bioassay for monitoring industrial waste water and mutagens. *Journal of Fujian University (Natural Science)*, 4(1):73-77, 1988.
2. Pi, M, Angata K, Ikemura T, Yanagisawa, K and Tanaka, Y: Analysis of a tRNA gene-like sequence (t-element) with TTA at the anticodon position in the mitochondrial DNA of the *D. discoideum*. *J Plant Res.* 109: 1-6, 1996.
3. Morio, T, Urushihara, H, Saito, T, Ugawa, Y, Mizuno, H, Yoshia, M, Yoshino, R, Mitra, BN, Pi, M, Sat, T, Takemoto, K, Yasukawa and Williams, J: The Dictyostelium developmental cDNA project: Generation and analysis of expressed sequence tags from the first-finger stage of development. *DNA Res.* 5(6):335-40, 1998.
4. Iwomoto, M, Pi, M, Kurihara, M, Morio, T, Tanaka, Y.: A ribosomal protein gene cluster is encoded in the mitochondrial DNA of Dictyostelium discoideum: UGA termination codons and similarity of gene order to Acanthamoeba castellanii. *Crr Genet.* 33: 304-310, 1998.
5. Pi, M, Morio, T, Urushihara, H, Tanaka, Y: Characterization of a novel small RNA encoded by Dictyostelium discoideum mitochondrial DAN. *Mol. Gen. Genet.* 257: 124-131, 1998.
6. Spurney, RF, Pi, M, Flannery, P, Quarles, LD: Aluminum is a weak agonist for the calcium sensing receptor. *Kidney Int* 55: (5) 1750-1758, 1999.
7. Pi, M, Hinson, TK, Quarles, LD: Failure to detect the extracellular calcium sensing receptor (CasR) in human osteoblast cell lines. *J Bone and Mineral Res* 14(8): 1310-1319, 1999.
8. Ogawa S, Yoshino R, Angata K, Ivamoto M, Pi M, Kuroe K, Matsuo K, Morio T, Urushihara H, Yanagisawa K, Tanaka Y: The mitochondrial DNA of Dictyostelium discoideum: complete sequence, gene content and genome organization. *Mol. Gen. Genet.* 263: 514-519, 2000.
9. Pi, M, Garner, SC, Flannery, PF, Spurney, RF, Quarles, LD: Sensing of extracellular cations in osteoblasts derived from CasR knockout mice: Evidence for a novel cation sensing mechanism. *J. Biol Chem* 275(6): 3256-3263, 2000.
10. Pi, M., Spurney, R.F., Tu, Q., Hinson, T.K., Quarles, L.D: Calcium-sensing receptor activation of Rho involves filamin and Rho-guanine nucleotide exchange factor. *Endocrinology* 143: 3830-3838, 2002.
11. Tu, Q., Pi, M., Karsenty, G., Simpson, L.G., Liu, S., Quarles L.D: Rescue of the skeletal phenotype in CasR-deficient mice by transfer onto the gcm2 null background. *J. Clin. Invest.* 111:1029-1037, 2003.
12. Tu, Q, Pi M, Quarles LD: Calcyclin mediates serum response element (SRE) activation by an osteoblastic extracellular cation-sensing mechanism. *J. Bone Miner Res* 18(10): 1825-33, Oct 2003.
13. Pi, M, Quarles, LD: The novel cation –sensing mechanism in osteoblasts is a molecular target for strontium. *J Bone Miner Res* 19: 862-869, 2004.
14. Pi, M, Oakley RH, Gesty-Palmer D, Cruickshank RD, Spurney RF, Luttrell LM, Quarles LD:  $\beta$ -Arrestin-

and GRK-mediated CASR desensitization. *Mol Endocrinol.* 19(4):1078-87. 2005.

15. Pi, M, Quarles LD: The Osteoblast calcium-sensing receptor has characteristics of ANF/7TM receptors. *J. Cell. Biochem.* 95(6):1081-92, 2005.
16. Pi, M, Faber, P, Ekema, G, Jackson, P.D, Ting, A, Wang, N, Fontilla-Poole, M, Mays, R.W, Brunden, K. R, Harrington, J.J, Quarles, L. D. Identification of a novel extracellular cation sensing g-protein coupled receptor. *J. Biol Chem.* 280(48):40201-9. 2005.
17. Liu, S, Tang, W, Zhou, J, Stubbs, JR, Luo, Q, Pi, M, Quarles, LD. Fibroblast growth factor 23 is a counter-regulatory phosphaturic hormone for vitamin D. *J Am Soc Nephrol.* 17(5):1305-15, 2006.
18. Pi, M, Chen L, Huang M, Luo Q, Quarles LD. Parathyroid-specific interaction of the calcium-sensing receptor and G alpha q. *Kidney Int.* 74(12):1548-56, 2008.
19. Pi, M, Chen L, Huang MZ, Zhu W, Ringhofer B, Luo J, Christenson L, Li B, Zhang J, Jackson PD, Faber P, Brunden KR, Harrington JJ, Quarles LD. GPRC6A null mice exhibit osteopenia, feminization and metabolic syndrome. *PLoS ONE.* 3(12):e3858, 2008.
20. Quarles LD, Pi, M. Calcium-Sensing Receptor Function in the Skeleton: Alternative Interpretations. *Sci. Signal.* (E-Letter, 10 November 2008) <http://stke.sciencemag.org/cgi/eletters/sigtrans;1/35/ra1#591>.
21. Pi, M, J. Chen, W. Zhu, and L. D. Quarles, Dominant Negative Effect of the Extracellular Domain of CASR *Journal of Receptor, Ligand and Channel Research* 3:15-23, 2010.
22. Pi, M, L. Zhang, S.F. Lei, M.Z. Huang, W. Zhu, J. Zhang, H. Shen, H.W. Deng and L. D. Quarles, Impaired Osteoblast Function in GPRC6A Null Mice. *J Bone Miner Res.* 25(5): 1092-1102, 2010.
23. Pi, M, Parrill AL, Quarles LD: GPRC6A mediates the non-genomic effects of steroids. *J Biol Chem.* 285(51):39953-64, 2010. PubMed PMID: 20947496.
24. Pi M, Wu Y, Quarles LD. GPRC6A mediates responses to osteocalcin in  $\beta$ -cells in vitro and pancreas in vivo. *J Bone Miner Res.* 26(7):1680-3, 2011.
25. Pi M, Quarles LD. GPRC6A regulates prostate cancer progression. *Prostate.* 72(4):399-409, 2012.
26. Pi M, Quarles LD. Multiligand Specificity and Wide Tissue Expression of GPRC6A Reveals New Endocrine Networks. *Endocrinology.* 153(5):2062-9, 2012. PMID: 22374969.
27. Pi M, Wu Y, Lenchik NI, Gerling I, Quarles LD. GPRC6A Mediates the Effects of L-Arginine on Insulin Secretion in Mouse Pancreatic Islets. *Endocrinology.* 153(10):4608-15, 2012. PMID: 22872579.
28. Erik C. Dreaden, Berkley E. Gryder, Lauren A. Austin, Brice A. Tene Defo, Steven C. Hayden, Min Pi, L. Darryl Quarles, Adegboyega K. Oyelere, and Mostafa A. El-Sayed: Antiandrogen Gold Nanoparticles Dual-Target and Overcome Treatment Resistance in Hormone-Insensitive Prostate Cancer Cells. *Bioconj. Chem.* 23(8):1507-12, 2012. PMID: 22768914.
29. Pi M and L. Darryl Quarles. Novel Bone Endocrine Networks Integrating Mineral and Energy Metabolism. *Current Osteoporosis Reports.* *Curr Osteoporos Rep.* 11(4):391-9, 2013. PMID: 24193547

30. Pi M. Pancreatic  $\beta$ -cells Specific Knockout of *Gprc6a* Reveals its Essential Roles in Insulin Secretion. *Endocrinology*. Submit, 2014.

### **PRESENTATIONS AND POSTERS:**

1. M. Pi, K. Angata, K. Yanagisawa and Y. Tanaka: Study on tRNA-like sequence in mt DNA of *D. discoideum*. Proceedings of the 57th Annual Meeting of the Botanical Society of Japan (Nara, Japan, 1992).
2. M. Pi, K. Angata, K. Yanagisawa and Y. Tanaka: Sequence of tRNA-like structure with a UUA anticodon in the mitochondrial DNA of the Cellular Slime Mold, *D. discoideum*. XV International Botanical Congress (Yokohama, Japan, 1993).
3. M. Pi, K. Angata, K. Yanagisawa and Y. Tanaka: Analysis of small molecular RNA (5S) found in *Dictyostelium discoideum* mitochondria. Proceedings of the 17th Annual Meeting of the Molecular Biological Society of Japan (Kobe, Japan, 1994).
4. M. Pi, K. Angata, K. Yanagisawa and Y. Tanaka: Study on small molecular RNA (5S) found in *Dictyostelium discoideum* mitochondria. Proceedings of the 5th Meeting of the Genetic Society of China (Taian, China, 1995).
5. T. Morio, R. Yoshino, M. Pi, Mitra Biswa Nath, H. Urushihare, J. Williams and Y. Tanaka: *Dictyostelium* cDNA Project in Japan: Progress in 1996-1997. *Dictyostelium discoideum* International Congress (Dicty 97). (Snowbird, Utah, USA, 1997).
6. M. Pi, T. Hinson, and L. D. Quarles: Further evidence for a novel cation sensing receptor in osteoblast cell lines. Federation of American Societies for Experimental Biology '99. (Washington, DC. USA, 1999).
7. S. C. Garner, M. Pi, and L. D. Quarles: Delayed Endochondral Bone Formation in Calcium-Sensing Receptor Deficient Mice. The American Society for Bone and Mineral Research (ASBMR) 21st Annual Meeting. ( St. Louis, Missouri, USA, 1999 ) (Plenary Poster).
8. M. Pi, S. C. Garner, and L. D. Quarles: Sensing of extracellular cations in osteoblasts derived from CasR knockout mice: evidence for a novel cation sensing mechanism. The American Society for Bone and Mineral Research (ASBMR) 21st Annual Meeting. (St. Louis, Missouri, USA, 1999 ).
9. Q. Tu, M. Pi, G. Karsenty, and L. D. Quarles (2002): Transfer of CasR deficiency onto the GCM2 null background rescues the perinatal lethality and skeletal abnormalities in CasR-deficient mice. ASBMR 24<sup>th</sup> Annual Meeting. (San Antonio, Texas, USA) (Concurrent oral).
10. M. Pi, Q. Luo, V. Shalhoub, D. Martin, L. D. Quarles: A Novel Target for Calcimimetics in Osteoblasts Lacking CASR. ASBMR 26<sup>th</sup> Annual Meeting, Seattle, WA., Oct. 1-5, 2004.
11. M. Pi, K. R. Brunden, J. Harrington, and L. D. Quarles: Calcium and osteocalcin sensing properties of GPRC6A. ASBMR 27<sup>th</sup> Annual Meeting, Nashville, Tennessee, USA., Sep. 23-27, 2005.
12. M. Pi, P. Faber, G. Ekema, P. D. Jackson, A. Ting, N. Wang, M. Fontilla-Poole, R.W. Mays, K. R. Brunden, J. J. Harrington, L. D. Quarles. Identification of a novel extracellular cation sensing g-protein

- coupled receptor. ASN 38<sup>th</sup> Annual Renal Week Meeting, Philadelphia, Pennsylvania, USA, November 8 - 13, 2005. (Oral presentation).
13. M. Pi, Q. Luo, M. Huang, M. Zybko, B. Ringhofer, K. R. Brunden, J. Harrington and L. D. Quarles. Evidence that GPRC6A is novel calcium sensing receptor, GPRC6A that regulate bone formation. The American Society for Bone and Mineral Research (ASBMR) 28th Annual Meeting, Philadelphia, Pennsylvania, USA, September 15-16, 2006. (Oral presentation).
  14. M. Pi, Q. Luo and L. D. Quarles. Role of G-alpha-q in Parathyroid Gland Function Elucidated by Mouse Genetics. The American Society for Bone and Mineral Research (ASBMR) 29th Annual Meeting, Honolulu, Hawaii, USA, September 16-19, 2007.
  15. M. Pi, L. Chen, M. Huang, W. Zhu, B. Ringhofer, J. Luo, L. Christenson, B. Y. Li, J. Zhang, P. D. Jackson, P. Faber, K. R. Brunden, J. J. Harrington, and L. D. Quarles. GPRC6A Null Mice Exhibit Osteopenia and Feminization. The American Society for Bone and Mineral Research (ASBMR) 30th Annual Meeting, Montréal, Québec, Canada, September 12-16, 2008. (Plenary Poster).
  16. M. Pi, W. Zhu, J. Chen, and L. D. Quarles. GPRC6A, An Androgen-Sensing G-protein-Coupled Receptor. The American Society for Bone and Mineral Research (ASBMR) 31st Annual Meeting, Denver, Colorado, USA, September 11-15, 2009. (Oral presentation).
  17. M. Pi, J. Chen, W. Zhu, and L. D. Quarles. Osteoblast Extracellular Calcium Sensing Receptor (Casr) Redux. The American Society for Bone and Mineral Research (ASBMR) 31st Annual Meeting, Denver, Colorado, USA, September 11-15, 2009. (Oral presentation).
  18. M. Pi, Y. Wu, S. K. Nishimoto, S. E. Senogles and L. Darryl Quarles. Role of GPRC6A in Regulating Pancreatic Beta-Cell Proliferation and Insulin Secretion. ISN World Congress of Nephrology 2013, Hong Kong, May 31-June 4, 2013.

#### **PATENT APPLICATIONS AND AWARDS**

1. GPRC6A as a Biomarker for Type II Diabetes, Jun. 20, 2013; PD12141; L. Darryl Quarles, Min Pi, Adegboyega Oyelere.
2. GPRC6A as a Biomarker for Prostate Cancer, Jun. 20, 2013; PD12094; L. Darryl Quarles, Min Pi, Adegboyega Oyelere.
3. Methods for Treating a Disorder by Regulating GPRC6A, 2009; Application No:20090142323; L. Darryl Quarles, Min Pi.