CURRICULUM VITA

Name	: Basem M. Abdallah		
Birth date	: 6 Feb. 1970		
Current position	: Associate Professor/Research Group Leader		
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Website	: <u>http://www.biomedexperts.com/Profile.bme/1640286/Basem_M_Abdallah</u> : <u>http://www.researchgate.net/profile/Basem_Abdallah/</u>		
Marital status Languages Nationality of Origin	: Married : Arabic /English/ Danish :Egyptian		

Present Nationality : Danish

Educational Qualifications

2008 Work environment leadership, Denmark.

- 2007 Leadership Development Certificate from the EMBO organization, Heidelberg, Germany.
- 1999 PhD in Molecular Biology, Technical University of Vienna, Austria.
- 1994 MSc in Biochemistry, Faculty of Science, Helwan University, Egypt.

Career Progression (Research and Academic)

2009 - 2015	Associate Professor, Institute of Clinical Research, University of Southern Denmark.
2004 -2009	Assistant professor/laboratory manger, KMEB Lab., Odense University Hospital, Denmark.
2001 - 2003	Postdoctoral fellow, Molecular Endocrinology Lab., OUH, Denmark
1995 - 1999	PhD Student, Inst. Gene Technology, Technical University of Vienna, Austria.
1992 - 1994	Demonstrator/MSc student, Biochemistry Dept., Faculty of Science, Helwan University,
	Egypt.

Milestones and Major Accomplishments in the last 10 years

- Publishing over 45 peer reviewed original articles, 7 reviews and 4 book chapters in the field of translational stem cells.
- Owning 3 patents related to novel factors controlling adult stem cell differentiation.
- Obtained research grants of 12 Million Kr (equivalent to 2 million US dollars).
- Member of the editorial board of Frontiers in Bone Research journal and World Journal of Stem Cells.

- Oral presentations at international meetings (ECTS, ASBMR & IOF: 2005, 2006, 2007, 2008, 2010, 2011, 2014).
- Awarded with promotion to Associate Professor with outstanding performance from Denmark 2009.
- Acquired extensive experience (20 years) in working with the most advanced techniques in Molecular Stem Cell Biology research.
- Recipient of 'The New Investigator Award', European Calcified Tissue Society (ECTS) 2008.
- Supervised 12 PhD and 6 Master students.
- Recipient of 'The Best Poster Prize ', European Calcified Tissue Society (ECTS) 2008.
- Winner of 'The Young Investigator Award, International Bone and Mineral Society (IBMS) 2005.
- Post-Doc fellowship from Alfred Benzon Foundation, Denmark. 3 years (2002-2005).
- Post-Doc fellowship from World Laboratory Foundation, Switzerland. 1 year (2001-2002)
- Ph.D. fellowship from Austrian Academic Exchange Service, Austria. Full PhD salary (1995-1999).

Grants received in the last 10 years:

-The Danish Council for Independent Research	(1.8 million Kr= 300,000 U\$)	2014	
-University of Southern Denmark	(2.1 million Kr= 367,000 U\$)	2013	
-Exploratory Pre-seed (Novo Nordisk, Denmark)	(500,000 Kr = 85,000 U\$)	2013	
-The Danish Council for Independent Research	(1,1 million Kr = 185,000 U\$)	2012	
-Odense University Hospital	(1 million Kr = 166,000 U\$)	2010	
-Novo nordisk foundation, Denmark	(800,000 Kr = 130,000 U\$)	2009	
-LundbeckFonden, Denmark	(600,000 Kr = 109,000 U\$)	2008	
-Novo Nordisk Foundation, Denmark	(1,4 million Kr = 254,000 U\$)	2005	
-Alfred Benzon Foundation, Denmark	(1,5 Million Kr = 272,000 U\$)	2002	
-PhD scholarship, 4 years, (Austrian Academic Exchange Service) Austria (100,000 Euro)			

Management experience

- Broad experience in establishing new Molecular Cell Biology research laboratories.
- Active participation in the laboratory design of the new coming research institute in Odense, SDU, Denmark.
- Managing a well-equipped Stem cell research laboratory manned with 25 people from different nationalities.
- Leading an independent research group working on translational stem cell research using adult stem cell.
- Fund raising with a proven ability to recruiter several grants from different foundations.
- Writing and reviewing scientific manuscripts, reviews, protocols and book chapters.

Academic experience

Teaching

- Experience in conducting teaching sessions in undergraduate and post graduate courses covering the following subjects:
 - Undergraduate Courses * Biochemistry (I&II) * Molecular Biology (I & II) *Stem Cell Biology * Molecular Genetics * Basic principle of Genetics * Laboratory animal science.
 - Post-graduate courses * Stem cells and regenerative medicine.

Supervision

- Independent guiding and supervising of graduate students including both Master & PhD students in conducting Molecular Stem Cell Biology research projects.
- The activities performed in the process of supervision include * Choosing the specific topic of research
 * Experimental design *Data analysis and interpretation * Quality assurance of the results * Scientific meetings and discussions

★ Revising the draft and final version of the thesis ★ preparing manuscript for publication.

Research area of interest:

I have distinguished career of over 12 years in leading translational research activities at the university level in the domains of stem cell biology allied disciplines. My main aim is to improve stem cell therapy at the hospital level (Odense University Hospital) though building a link between basic science (University of Southern Denmark) and clinical science (translational) at Odense University Hospital.

The main goal of my research area is to study the cellular and molecular events occurring during skeletogenic differentiation of adult bone marrow derived stem cells (hBMSC). Thus, I focused my research on identifying novel factors that controlling hBMSC differentiation into bone and cartilage lineages to potentially enhance their function in vivo after transplantation using tissue specific transgenic and knockout mice. Recently, I have used a combination of global transcriptome and proteomic analysis to study the cross-talk between different MSC progenitors in bone marrow. Extensive bioinformatics and molecular function analysis identified 6 novel secreted proteins that exerting regulatory role in enhancing the skeletogenic function capacity of hBMSC after transplantation into bone-defect animal models.

Currently, I am leading several projects dealing with 1) developing novel strategies for stem cells transplantation to improve their homing and engraftment capacity into injured tissues in vivo; 2) Studying the mechanism of feed forward loop between bone and pancreas as a therapeutic target for type2 Diabetes; 3) Targeting the inhibition of the circulating factor delta like-1 using antibody-based strategy as a novel therapy for osteoporosis and diabetes.

Conferences and international meetings attended (last 4 years)

- European Calcified Tissue International and IBMS, Rotterdam, Holland, 25-28 April 2015. (oral presentation).
- American Society for Bone and Mineral research (ASBMR 34th Annual meeting), Housten, Texsas, USA, 12-15 Sept. 2014. (oral presentation).
- American Society for Bone and Mineral research (ASBMR 33rd Annual meeting), Baltimore, Maryland, USA, 4-7 Oct 2013. (Poster presentation).
- European Interdisciplinary Summit on Cell-Based ATMPs, Vienna, Austria, May 2-3, 2013. (Oral presentation).
- International Society of Stem Cell meeting (ISSCR 10th annual meeting). Yokohama, Japan, 13-16 June 2012. (Poster presentation).
- American Society for Bone and Mineral research (ASBMR 31th Annual meeting), San Diego, California, USA, 16-20 September 2011. (Poster presentation)
- 1st IOF-ESCEO pre-clinical symposium (International Osteoporosis Foundation), Valencia, Spain, 22-23 March 2011. (oral presentation)
- European congress on osteoporosis and osteoarthritis, Valencia, Spain, 23-26 March 2011. (poster presentation)

Patents

1- Identification of novel neuro-protein CRMP4 as a potential therapeutic target for enhancing bone formation. **Basem M. Abdallah**, Kenneth Hauberg and Moustapha Kassem. University of Southern Denmark (2012).

2- Identification of a novel kinase inhibitor to enhance bone cell differentiation of skeletal (mesenchymal) stem cells. Abbas Jafari, **Basem M. Abdallah**, Li Chen, and Moustapha Kassem. University of Southern Denmark (2011).

3- Modulation of microRNA-138 for the treatment of bone loss. **Basem M. Abdallah**, Tilde Eskildsen, Hanna Taipaleenmäki, Sakari Kauppinen, Jan Stenvang, and Moustapha Kassem. Copenhagen University and University of Southern Denmark (2011).

Publication List in the last 10 years

Citations = 2,300 Impact Points= 305

*=Corresponding author

- Andersen RK, Zaher W, Larsen KH, Ditzel N, Drews K, Wruck W, Adjaye J, <u>Abdallah BM</u>*, Kassem M Association between in vivo bone formation and ex vivo migratory capacity of human bone marrow stromal cells.. Stem Cell Res Ther. 2015 Oct 8;6:196.

- <u>Abdallah BM</u>*, Al-Shammary A, Skagen P, Abu Dawud R, Adjaye J, Aldahmash A, Kassem M. CD34 defines an osteoprogenitor cell population in mouse bone marrow stromal cells. Stem Cell Res. 2015 Sep 21;15(3):449-458.

- <u>Abdallah BM</u>*, Ditzel N, Laborda J, Karsenty G, Kassem M. DLK1 Regulates Whole-Body Glucose Metabolism: A Negative Feedback Regulation of the Osteocalcin-Insulin Loop. Diabetes. 2015 Sep;64(9):3069-80.

- Saeed H, Qiu W, Li C, Flyvbjerg A, <u>Abdallah BM</u>*, Kassem M. Telomerase activity promotes osteoblast differentiation by modulating IGF-signaling pathway. Biogerontology. 2015 Dec;16(6):733-45

- Jafari A, Siersbaek MS, Chen L, Qanie D, Zaher W, <u>Abdallah BM</u>, Kassem M. Pharmacological Inhibition of Protein Kinase G1 Enhances Bone Formation by Human Skeletal Stem Cells Through Activation of RhoA-Akt Signaling. Stem Cells. 2015 Jul;33(7):2219-31.

- <u>Abdallah BM</u>, Jafari A, Zaher W, Qiu W, Kassem M. Skeletal (stromal) stem cells: an update on intracellular signaling pathways controlling osteoblast differentiation. Bone. 2015 Jan;70:28-36.

- Abdallah BM*, Beck-Nielsen H, Gaster M.

FA1 Induces Pro-Inflammatory and Anti-Adipogenic Pathways/Markers in Human Myotubes Established from Lean, Obese, and Type 2 Diabetic Subjects but Not Insulin Resistance. *Front Endocrinol (Lausanne)*. 2013;4:45.

- Andries A, Niemeier A, Støving RK, <u>Abdallah BM</u>, Wolf AM, Hørder K, Kassem M. Serum levels of fetal antigen 1 in extreme nutritional States. *ISRN Endocrinol.* 2012;:592648.

- Mahmood A, Harkness L, <u>Abdallah BM</u>, Elsafadi M, Al-Nbaheen MS, Aldahmash A, Kassem M. Derivation of Stromal (Skeletal and Mesenchymal) Stem-Like Cells from Human Embryonic Stem Cells. *Stem Cells Dev.* 2012 Nov 20;21(17):3114-24.

- Taipaleenmäki H, Harkness L, Chen Li, Larsen KH, Säämänen A, Kassem M and <u>Abdallah BM</u>*. The cross-talk between TGF-β1 and Dlk1 mediates early chondrogenesis during embryonic endochondral ossification. *STEM CELLS*. 2012 Feb;30(2):304-13.

- Abdallah BM, Kassem M.

New factors controlling the balance between osteoblastogenesis and adipogenesis. Bone. 2012 Feb;50(2):540-5

- Saeed H, Taipaleenmäki H, Aldahmash AM, <u>Abdallah BM</u>, Kassem M. Mouse Embryonic Fibroblasts (MEF) Exhibit a Similar but not Identical Phenotype to Bone Marrow Stromal Stem Cells (BMSC). *Stem Cell Rev.* 2012 Jun;8(2):318-28.

Chen L, Qanie D, Jafari A, Taipaleemaki H, Jensen CH, Sanz ML, Laborda J, <u>Abdallah BM</u>, Kassem M.
 Delta-like 1 / fetal antigen-1 (Dlk1/FA1) is a novel regulator of chondrogenic cell differentiation via inhibition of the AKT-dependent pathway. *J Biol Chem.* 2011, Sep 16;286(37):32140-9.

- <u>Abdallah BM</u>*, Bay-Jensen A, Srinivasan B, Tabassi NC, Garnero P, Delaissé J, Khosla S, Kassem M. Estrogen inhibits Dlk1/FA1 production: A potential mechanism for estrogen effects on bone turnover. *J Bone Miner Res.* 2011 Oct;26(10):2548-51

- Basem M. Abdallah*, Linda Harkness, Amer Mahmood and Moustapha Kassem

Embryonic Stem Cells: The Hormonal Regulation of Pluripotency and Embryogenesis "Direct Differentiation of Human Embryonic Stem Cells toward Osteoblasts and Chondrocytes through an Intermediate Mesenchyme Progenitor Lineage. ISBN 978-953-307-196-1, Publisher: InTech. May 2011. (Book Chapter).

-Eskildsen T, Taipaleenmäki H, Stenvang J, <u>Abdallah BM</u>, Ditzel N, Nossent AY, Bak M, Kauppinen S, Kassem M. MicroRNA-138 regulates osteogenic differentiation of human stromal (mesenchymal) stem cells in vivo. *Proc Natl Acad Sci U S A*. 2011 Mar 28.

-Arvidson K, <u>Abdallah BM</u>, Applegate LA, Baldini N, Cenni E, Gomez-Barrena E, Granchi D, Kassem M, Konttinen YT, Mustafa K, Pioletti DP, Sillat T, Finne-Wistrand A. Bone regeneration and stem cells. *J Cell Mol Med.* 2011 Apr;15(4):718-746.

-Taipaleenmäki H, <u>Abdallah BM</u>*, Aldahmash A, Säämänen AM, Kassem M. Wnt signalling mediates the cross-talk between bone marrow derived pre-adipocytic and pre-osteoblastic cell populations. *Exp Cell Res.* 2011 Apr 1;317(6):745-56

- Saeed H, <u>Abdallah BM</u>, Ditzel N, Catala-Lehnen P, Qiu W, Amling M, Kassem M. Telomerase-deficient mice exhibit bone loss due to defects in osteoblasts and increased osteoclastogenesis by inflammatory microenvironment. *J Bone Miner Res.* 2011 Jul;26(7):1494-505

-<u>Abdallah BM</u>*, Ditzel N, Mahmood A, Isa A, Traustadottir GA, Schilling AF, Ruiz-Hidalgo M, Laborda J, Amling M, Kassem M. DLK1 is a novel regulator of bone mass that mediates estrogen-deficiency induced bone loss in mice. *J Bone Miner Res.* 2011 Jul;26(7):1457-71.

- Harkness LM, Mahmood A, Ditzel N, <u>Abdallah BM</u>, Nygaard JV, Kassem M. Selective Isolation and Differentiation of a Stromal Population of Human Embryonic Stem Cells with Osteogenic Potential. *Bone*. 2011 Feb 1;48(2):231-41.

-Kupisiewicz K, Boissy P, <u>Abdallah BM</u>, Hansen FD, Erben RG, Savouret JF, Søe K, Andersen TL, Plesner T, Delaisse JM. Potential of resveratrol analogues as antagonists of osteoclasts and promoters of osteoblasts. *Calcif Tissue Int.* 2010 Nov;87(5):437-49.

-Amer Mahmood, Linda Harkness, Henrik Daa Schrøder, <u>Basem M. Abdallah</u>*, and Moustapha Kassem. Enhanced differentiation of human embryonic stem cells to mesenchymal progenitors by inhibition of TGFβ/Activin/Nodal signaling using SB-431542. *J Bone Miner Res.* 2010 Jun;25(6):1216-33.

-Kenneth Hauberg Larsen, Casper M. Frederiksen, Jorge S. Burns, **<u>Basem M. Abdallah</u>**, and Moustapha Kassem. Identifying a Molecular Signature for Osteoblastic Cells with In Vivo Bone Forming Capacity. *J Bone Miner Res*, 2010 Apr;25(4):796-808.

-Kraft DC, Bindslev DA, Melsen B, <u>Abdallah BM</u>, Kassem M, Klein-Nulend J. Mechanosensitivity of dental pulp stem cells is related to their osteogenic maturity. *Eur J Oral Sci.* 2010 Feb;118(1):29-38.

-Linda Harkness, Hanna Taipaleenmaki, Amer Mahmood1, Ulrik Frandsen, Anna-Marja Saamanen, Moustapha Kassem and **Basem M. Abdallah***. Isolation and differentiation of Chondrocytic Cells Derived from Human Embryonic Stem Cells Using dlk1/FA1 as a Novel Surface Marker. *Stem Cell Reviews and reports*. 2009 Dec;5(4):353-68.

- Basem M. Abdallah, Hamid Saeed and Moustapha Kassem

Human Mesenchymal (Skeletal) Stem cells: Basic biology and clinical applications for bone tissue regeneration, *H. Baharvand (ed.), Trends in Stem Cell Biology and Technology.* ISBN 978-1-60327-904-8. Publisher: Humana Press, 2009. (Book Chapter).

- <u>Abdallah BM</u>*, Kassem M. The use of mesenchymal (skeletal) stem cells for treatment of degenerative diseases: Current status and future perspectives. *J Cell Physiol*. 2009 Jan;218(1):9-12. (Review)

- Basem M. Abdallah, Nicholas Ditzel and Moustapha Kassem

Assessment of Bone Formation Capacity Using In Vivo Transplantation Assays: Procedure and Tissue Analysis. *Methods in Molecular Medicine*. Editor: Jennifer J. Westendorf, Publisher: Humana Press. 2008;455:89-100. (Book chapter).

- S. Post, B.M. Abdallah, J. F. Bentzon, and M. Kassem.

Demonstration of the Presence of Independent Pre-Osteoblastic and Pre-Adipocytic Cell Populations in Bone Marrow-derived Mesenchymal Stem Cells. *Bone*. 2008 Jul;43(1):32-9.

- Kassem M, <u>Abdallah BM</u>, Saeed H.

Osteoblastic cells: differentiation and trans-differentiation. Arch Biochem Biophys. 2008 May15;473(2):183-7.

- Abdallah BM and M Kassem

Human mesenchymal stem cells: From basic biology to clinical applications. Gene Therapy. 2008 Jan;15(2):109-16.

- Qiu W, Andersen TE, Bollerslev J, Mandrup S, <u>Abdallah BM</u>, Kassem M.
 Patients with high bone mass phenotype exhibit enhanced osteoblast differentiation and inhibition of adipogenesis of human mesenchymal stem cells. *J Bone Miner Res.* 2007 Nov; 22(11):1720-31.
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- <u>- Abdallah BM</u>*, Ding M, Jensen CH, Ditzel N, Flyvbjerg A, Jensen TG, Dagnaes-Hansen F, Gasser JA, Kassem M. Dlk1/FA1 Is a Novel Endocrine Regulator of Bone and Fat Mass and Its Serum Level Is Modulated By Growth Hormone. *Endocrinology*. 2007 Jul;148(7):3111-21.
- <u>Abdallah BM</u>*, Boissy P, Tan Q, Dahlgaard J, Traustadottir GA, Kupisiewicz K, Laborda J, Delaisse JM, Kassem M. dlk1/FA1 regulates the function of human bone marrow mesenchymal stem cells by modulating gene expression of pro-inflammatory cytokines and immune response-related factors. *J Biol Chem.* 2007 Mar 9;282(10):7339-51.
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Osteoblast Differentiation Of NIH3T3 Fibroblasts Is Associated With Changes In The IGF-I/IGFBPs Expression Pattern. *Cell Mol Biol Lett.* 2006;11(4):461-74.

- <u>Basem M. Abdallah</u>, Mandana Haack-Sørensen, Trine Fink, Moustapha Kassem Inhibition of Osteoblast Differentiation but not Adipocyte Differentiation of Mesenchymal Stem Cells by Sera obtained from Aged Females. Bone. 2006 Jul;39(1):181-8.
- Boissy P, Andersen TL, <u>Abdallah BM</u>, Kassem M, Plesner T, Delaisse JM.
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- Abdallah BM, Beck-Nielsen H, Gaster M.

Increased expression of 11beta-hydroxysteroid dehydrogenase type 1 in type 2 diabetic myotubes. *Eur J Clin Invest.* 2005 Oct;35(10):627-34.

- Burns JS, <u>Abdallah BM</u>, Guldberg P, Rygaard J, Schroder HD, Kassem M. Tumorigenic heterogeneity in cancer stem cells evolved from long-term cultures of telomeraseimmortalized human mesenchymal stem cells. *Cancer Res.* 2005 Apr 15;65(8):3126-35
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 [The cytokine system of bone tissue] Ugeskr Laeger. 2005 Feb 21;167(8):874-8. Review. Danish
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 Maintenance of differentiation potential of human bone marrow mesenchymal stem cells immortalized by human telomerase reverse transcriptase gene despite of extensive proliferation. *Biochem Biophys Res Commun.* 2005 Jan 21;326(3):527-38.
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 Induction of adipocyte-like phenotype in human mesenchymal stem cells by hypoxia. *Stem Cells*. 2004;22(7):1346-55.
- <u>Abdallah BM</u>, Jensen CH, Gutierrez G, Leslie RG, Jensen TG, Kassem M.
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- Moustapha Kassem, <u>Basem M. Abdallah</u>, Zentao Yu, Nicholas Ditzel, Jorge S. Burns. The Use of hTERT-immortalized Cells in Tissue Engineering. *Cytotechnology*. 2004 45:39-46
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