**Md Monowarul Mobin Siddique, PhD**

Research Assistant Professor

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**EDUCATION**

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| **PhD** | Department of Biochemistry, National University of Singapore, Singapore | 2006 |
| **MSc** | Major in Animal Genetics, University of Rajshahi, Bangladesh | 1997 |
| **BSc** | Department of Zoology, University of Rajshahi, Bangladesh | 1995 |

**EMPLOYMENT**

**2023 - Present** Research Assistant Professor, University of Utah

**2016 - 2023** Associate Professor, University of Brunei Darussalam, Brunei

**2013 - 2016** Associate Professor, The University of Nottingham, Malaysia Campus

**2009 - 2013** Senior Research Fellow, Duke-NUS Medical School, Singapore

**2007 - 2009** Research Scientist, Singapore Health Services, Singapore

**2006 – 2007** Postdoctoral Fellow, Institute of Molecular and Cell Biology, Singapore

**2001 – 2006** Research Officer, National Cancer Centre Singapore, Singapore

**Research Interest**

My research interests lie primarily in Metabolic disorders and Cancer. In the early stages of my training, I worked on molecular carcinogenesis. During my postdoctoral fellowship in Dr. Scott Summers lab at Duke-NUS Medical School, I started to work on sphingolipid-mediated molecular alterations that contribute to metabolic disorders including cancer. During this training, I reported that genetic ablation of a sphingolipid precursor, ceramide, confers resistance to apoptosis while inducing autophagy. Later we demonstrated that inhibition of de novo sphingolipid synthesis improved insulin sensitivity while reducing hepatic fat in mouse models of obesity. This experience piqued my interest in developing a fuller understanding of how sphingolipids modulate metabolic balance, cell proliferation, autophagy, and apoptosis. I am keen to proceed with mechanistic studies investigating the role of specific sphingolipid metabolites in anabolic signaling, lipid metabolism, autophagy, and apoptosis.

**Courses Taught**

UBD 2106-2022

Introduction to Biochemistry (SB-2343)

Advanced Biochemistry (SB-4341)

Nutritional Biochemistry (SB-4340)

Human Life & Environment (SB 2405)

UNMC 2013-2016

Molecular Nutrition (D23BN3)

Research in Nutrition and Biochemistry (D224NP)

Biochemistry of Mammalian Development (D223N1)

Introduction to Nutrition (D21BN1)

Principles of Immunology (D223N6)

**Publications**

Khan, MM, Goh YW, Ahmad N, **Siddique, MM**. 2022. Understanding and combating COVID-19 using the biology and chemistry of SARS-CoV-2. Bioprocess and Biosystems Engineering, 2022, 45(11), pp. 1753–1769.

Md Abdur Rashid Mia, Qamar Uddin Ahmed, Abul Bashar Mohammed Helaluddin, Sahena Ferdosh, **Monowarul Mobin Siddique**, Syed Najmul Hejaz Azmi, Jahangeer Ahmed, Md Zaidul Islam Sarker. 2022. Acute and subacute toxicity assessment of subcritical liquid CO2 extract of Phaleria macrocarpa fruits flesh in mice model. ***Journal of King Saud University-Science***. 34(3): 101912.

Ndanusa AH, Cicuzza D and **MM Siddique**. 2020. Analysis of the phytochemical contents and anti-oxidative properties of Stenochlaena palustris. ***International Food Research Journal***. 27 (5): 798-804.

Chaurasia B, Tippetts TS, Mayoral Monibas R, Liu J, Li Y, Wang L, Wilkerson JL, Sweeney CR, Pereira RF, Sumida DH, Maschek JA, Cox JE, Kaddai V, Lancaster GI**, Siddique MM**, Poss A, Pearson M, Satapati S, Zhou H, McLaren DG, Previs SF, Chen Y, Qian Y, Petrov A, Wu M, Shen X, Yao J, Nunes CN, Howard AD, Wang L, Erion MD, Rutter J, Holland WL, Kelley DE, Summers SA. 2019. Targeting a ceramide double bond improves insulin resistance and hepatic steatosis. ***Science***. 365(6451):386-392.

Lye HM, Chiew JC and **Siddique MM.** 2017. Cytotoxic effect of commonly used food dyes on human hepatoma cell line, HepG2. ***International Food Research Journal****.* 25 (4): 1457-1463.

Chaurasia B, Kaddai VA, Lancaster GI, Henstridge DC, Sriram S, Galam DL, Gopalan V, Prakash KN, Velan SS, Bulchand S, Tsong TJ, Wang M, **Siddique MM**, Yuguang G, Sigmundsson K, Mellet NA, Weir JM, Meikle PJ, Bin M Yassin MS, Shabbir A, Shayman JA, Hirabayashi Y, Shiow ST, Sugii S, Summers SA. 2013. Adipocyte Ceramides Regulate Subcutaneous Adipose Browning, Inflammation, and Metabolism. ***Cell Metab***. 24(6):820-834.

**MM Siddique**, Ying Li, B Chaurasia, VA Kaddai, and Scott A. Summers. 2015. Dihdyroceramides: From Bit Players to Lead Actors. ***J Biol Chem***. 290(25):15371-9.

**MM Siddique**, Ying Li, Liping Wang, Jianhong Ching, Mainak Mal, Olga Ilkayeva, Ya Jun Wu, Boon Huat Bay, and Scott Summers. 2013. Ablation of Dihydroceramide Desaturase-1, a therapeutic target for the treatment of metabolic diseases, simultaneously stimulates anabolic and catabolic signaling. ***Mol Cell Biol****.* 33(11): 2353-69.

**MM Siddique**, Benjamin T Bikman, Liping Wang, Li Ying, Erin Reinhardt, Guanghou Shui, Markus R. Wenk, and Scott A. Summers. 2012. Ablation of Dihydroceramide Desaturase Confers Resistance to Etoposide-Induced Apoptosis.

***PLoS ONE****.* 7(9): e44042.

Jose A. Chavez, **M. Mobin Siddique**, Puck Wee Chan, James A. Shayman, and Scott A. Summers. 2014. Ceramides and Glucosylceramides are Independent Antagonists of Insulin Signaling. ***J Biol Chem***. 289(2): 723-34.

RA Sinha, Seo-Hee You, Zhou J,**MM Siddique**, BH Bay, X Zhu, M Privalsky, S Cheng, R Stevens, SA Summers, CB Newgard, MA Lazar, PM Yen. 2012. Thyroid hormone stimulates hepatic autophagy associated with increased lipid catabolism. ***J Clin Invest***. 122(7):2428-38.

Sinha RA, Farah BL, Singh BK, **Siddique MM**, Li Y, Wu Y, Ilkayeva OR, Gooding J, Ching J, Zhou J, Martinez L, Xie S, Bay BH, Summers SA, Newgard CB, Yen PM. 2013. Caffeine stimulates hepatic lipid metabolism via autophagy-lysosomal pathway. ***Hepatology****.* 59(4):1366-80.

Bikman BT, Guan Y, Shui G, **Siddique MM**, Holland WL, Kim JY, Fabriàs G, Wenk MR, Summers SA.2012. Fenretinide prevents lipid-induced insulin resistance by inhibiting dihydroceramide desaturase and blocking ceramide synthesis. ***J Biol Chem***. 287(21):17426-37.

**Monowarul Mobin Siddique**, Zhao Yi, Lim Hui Qin, Gita Krishnaswamy, Tan Eng King. 2014. Association study of p53 codon 72 polymorphism in Parkinson’s disease**. *Basal Ganglia*.** 4: 71-73.

**MM Siddique** and EK Tan. 2010. Neurochemistry changes associated with mutations in Familial Parkinson’s disease. ***Curr Med Chem***. 17(35): 4378-91.

**M Siddique** and K Sabapathy. 2006. Trp53-dependent DNA-repair is affected by the codon 72 polymorphism. ***Oncogene***. 25(25): 3489-3500.

**Siddique MM**, Balram C, Fiszer-Maliszewska L, Aggarwal A, Tan A, Tan P, Soo KC, Sabapathy K. 2005. Evidence for selective expression of the p53 codon 72 polymorphs: implications in cancer development. ***Cancer Epidemiol Biomarkers Prev*.** 14(9):2245-2252.

Vikhanskaya F, **Siddique MM**, Kei Lee M, Broggini M, Sabapathy K. 2005. Evaluation of the combined effect of p53 codon 72 polymorphism and hotspot mutations in response to anticancer drugs. ***Clin Cancer Res***. 11(12):4348-4356.

Toh WH, **Siddique MM**, Boominathan L, Lin KW, Sabapathy K. 2004. c-Jun regulates the stability and activity of the p53 homologue, p73. ***J Biol Chem.***279(43):44713-44722.

EK Tan, F Refai, **M Siddique**, K Yap, P Ho, S Fook-Chong, Y Zhao. 2009. Clinically reported heterozygous mutations in PINK1 kinase domain exert a gene dosage effect. ***Human Mutat*.** 30(11):1551-7.

Tang JP, Tan CP, Li J, **Siddique MM**, Guo K, Chan SW, Park JE, Tay WN, Huang ZY, Li WC, Chen J, Zeng Q. 2010. VHZ is a novel centrosomal phosphatase associated with cell growth and human primary cancers. ***Mol Cancer***. 9:128.

Suhail SM, Kee TS, Woo KT, Tan HK, Yang WS, Chan CM, Foo MW, Li HH, **Siddique MM**, Wong KS. 2011. Impact of patterns of proteinuria on renal allograft function and survival: a prospective cohort study. ***Clin Transplant***. 25(3): E297-303.

**Siddique M M,** Yap K, and Tan EK. 2008. Pathogenic mutations in PTEN-induced kinase-1 (PINK-1) affect apoptosis rate in neuronal cells. ***Movement Disorders***. 23(1): S47-S47.

Tan EK, Saffrah F, and **Siddique M**. 2009. Domain location of heterozygous PINK1 mutations associated with differential stress induced cellular response. ***Movement Disorders*.** 24(1): S153-S153.

**Research Grants Awarded**

FIC Research Grant, 2021. University of Brunei Darussalam. $48,000. Duration: 2 years.

FIC Research Grant, 2018. University of Brunei Darussalam. $46,000. Duration: 2 years.

Fundamental Research Grant Scheme (FRGS), 2014. Ministry of Education, Malaysia. $24,000. Duration: 3 years.