

Benjamin, Yat-ming YUNG
(Former Head of Department and Chair Professor of Biomedical Science)



QUALIFICATIONS: Postdoctoral Fellow of Professor Arthur Kornberg (Nobel Laureate of Physiology and Medicine, 1959), Department of Biochemistry, Stanford University School of Medicine, Stanford, California, 1986-1989
Ph.D., Dept. of Pharmacology, Baylor College of Medicine, Texas, USA, 1986
MA, Dept. of Chemistry, Rice University, Texas, USA, 1982
BA, Dept. of Chemistry, Southern Illinois University at Carbondale, Illinois, USA, 1980

BRIEF OUTLINE OF EXPERIENCE AND POSTS HELD:

2016- Chair Professor and Former Head, Department of Health Technology & Informatics
2009 – 2015 Head & Chair Professor, Department of Health Technology & Informatics
2008 – 2009 Associate Head (Research) & Chair Professor, Department of Health Technology & Informatics
2006 – 2008 Director and Head, Graduate Institute of Natural Products, College of Medicine, Chang Gung University
2001 – 2006 Dean, Office of Research and Development, Chang Gung University
1993 – 2008 Professor, Department of Pharmacology, College of Medicine, Chang Gung University

RESEARCH INTERESTS:

Throughout these years, we have been focusing our effort and making important progress on the study of the nucleolar protein nucleophosmin/B23 (NPM) and its biological role in cancer. In recent review on NPM and cancer by Grisendi et al (Nature Reviews 6, 493-505, 2006), fifteen (~10%) out of 146 manuscripts being cited are from our previous and current work on NPM. It is evident that we have established a unique, novel system and strong background of NPM. Most importantly, recent findings from our laboratory have identified a potential but mostly uncharacterized role of NPM in transcriptional regulation (EMBO Report, 8:394-400, 2007; Cellular Signaling 18:2041-2048, 2006; BBRC 335:826-831, 2005). It prompts us to continue our study to advance our functional and mechanistic understanding of NPM's transcriptional roles and further expand our view on the link between gene expression regulation (or mis-regulation) and tumorigenesis. It is conceivable that we are able to establish an integrated, functional genomic-based system that will aid us in exploring an in-depth and global understanding of the roles of transcriptional regulators within a physiological and/or pathological context.

We have also set up a multidisciplinary platform that integrates computational biology and clinical genomics for genome-wide cancer study. We have developed a novel bioinformatics approach that computes the transcriptome-wide gene co-expression network of cancer, and identifies cancer-specific interruption of gene co-expressions. In addition to uncover new biological insight into cancer pathology, the gene co-expression discoveries are valuable for the development of cancer biomarkers and therapeutic targets. In parallel to cancer study, we also apply the co-expression strategy for the investigation of metabolic syndrome as a risk factor of cancer. We mainly focus on the genomic investigation of Hong Kong and Chinese population in order to gain racially relevant information for cancer prediction, diagnostics and treatment decision of the local.

INTERNATIONAL COLLABORATIONS

We have established strong collaborations with international experts in the areas of biostatistics, metabolic epigenetics, cancer genetics and clinical oncology.

- Prof. Xi Hong Lin, Harvard School of Public Health, USA (Biostatistics)
- Dr. Andrea Baccarelli, Harvard School of Public Health, USA (Environmental Epigenetics)
- Prof. Wing Hong Wong, Standard University, USA (Statistics)
- Prof. Lei Xing, Standard University, USA (Radiation Oncology)
- Prof. Sen-Yung Hsieh, Chang Gung Memorial Hospitals, Taiwan (Hepato-gastroenterology, proton cancer therapy, microbiology & immunology)
- Prof. Jau-Song Yu, Chang Gung University, Taiwan (Proteomics)
- Prof. Antony Liu, Chang Gung University, Taiwan (MRI & Radiation Oncology)

SERVICES TO PROFESSIONAL & SCIENTIFIC BODIES, CONSULTANCIES:

- Life-long Honorary professor (2011-Present), Chang Gung University
- Adjunct Professorship (1990-Present), The National Yang Ming University.
- Associate editorship of Chang Gung Medical Journal
- Reviewer for academic journals (*Oncogene*, *Carcinogenesis*, *International Journal of Cancer*, *Cancer Letters* and *FEBS Letters*)

AWARDS AND PATENTS:

Awards

2003	Research Excellence Award, Chang Gung University
1999	Outstanding Cancer Research Award from Chinese Oncology Society, R.O.C.
1999	Outstanding Research Award from Pharmacological Society, R.O.C.
1995 – 2006	National Science Council Research Award
1993 – 1994	National Science Council Outstanding Research Award
1993	Ministry of Education Outstanding Teacher Award
1990 – 2006	Chang Gung University Outstanding Teacher (top 5%; ranked 1st in several years; student evaluation)
1990 – 1992	National Science Council Excellent Performance Research Award
1985	Busch Award from Baylor College of Medicine (Outstanding Graduate Student in Department of Pharmacology)
1980	Alumni Award from Southern Illinois University (Outstanding Graduating Senior in the Major of Science)

Patent

2007	Method of Identifying Cancer Biomarkers and Cancer Progression. USA and Taiwan Patents.
2006	Detecting Recurrence and High Stage Bladder Carcinoma. USA, Germany, UK and Taiwan Patents.

- 2005 Nucleophosmin/B23-binding Peptide to Inhibit Tumor Growth and Regulate Transcriptional Activity of P53.
USA and Germany Patents.

REPRESENTATIVE PUBLICATIONS:

- Pei XM, **Yung BY**, Yip SP, Chan LW, Wong CS, Ying M, Siu PM: Protective effects of desacyl ghrelin on diabetic cardiomyopathy. *Acta Diabetologica*, 52(2):293-306 (2015).
- Sin TK, Tam BT, **Yung BY**, Yip SP, Chan LW, Wong CS, Ying M, Rudd JA, Siu PM: Resveratrol protects against doxorubicin-induced cardiotoxicity in aged hearts through the SIRT1-USP7 axis. *Journal of Physiology-London*, 593(8):1887-1899 (2015).
- Sin TK, **Yung BY**, Siu PM: Modulation of SIRT1-Foxo1 Signaling axis by Resveratrol: Implications in Skeletal Muscle Aging and Insulin Resistance. *Cellular Physiology and Biochemistry*, 35(2):541-552 (2015).
- Tam BT, Pei XM, Yu AP, Sin TK, Leung KK, Au KK, Chong JT, **Yung BY**, Yip SP, Chan LW et al: Autophagic adaptation is associated with exercise-induced fibre-type shifting in skeletal muscle. *Acta Physiologica*, 214(2):221-236 (2015).
- Tam BT, Pei XM, **Yung BY**, Yip SP, Chan LW, Wong CS, Siu PM: Autophagic Adaptations to Long-term Habitual Exercise in Cardiac Muscle. *International Journal of Sports Medicine*, 36(7):526-534 (2015).
- Yu AP, Pei XM, Sin TK, Yip SP, **Yung BY**, Chan LW, Wong CS, Siu PM: [D-Lys3]-GHRP-6 exhibits pro-autophagic effects on skeletal muscle. *Molecular and Cellular Endocrinology*, 401(C):155-164 (2015).
- Chan LWC, Lin XH, Yung G, Lui T, Chiu YM, Wang FF, Tsui NBY, Cho WCS, Yip SP, Siu PM, Wong SC, **Yung BY**: Novel structural co-expression analysis linking the NPM1-associated ribosomal biogenesis network to chronic myelogenous leukemia. *Scientific Reports*, 5:10973 (2015).
- Sin TK, **Yung BY**, Yip SP, Chan LW, Wong CS, Tam EW, Siu PM: SIRT1-dependent myoprotective effects of resveratrol on muscle injury induced by compression. *Front Physiol*, 6:293 (2015).
- Tam BT, Pei XM, **Yung BY**, Yip SP, Chan LW, Wong CS, Siu PM: Unacylated ghrelin restores insulin and autophagic signaling in skeletal muscle of diabetic mice. *Pflugers Archiv: European journal of physiology*, 467(12):2555-2569 (2015).
- Li CM, Chu WY, Wong DL, Tsang HF, Tsui NB, Chan CM, Xue VW, Siu PM, **Yung BY**, Chan LW et al: Current and future molecular diagnostics in non-small-cell lung cancer. *Expert Rev Mol Diagn*, 15(8):1061-1074 (2015).
- Lui TW, Tsui NB, Chan LW, Wong CS, Siu PM, **Yung BY**: DECODE: an integrated differential co-expression and differential expression analysis of gene expression data. *BMC Bioinformatics*, 16:182 (2015).
- Wang F, Chan LW, Tsui NB, Wong SC, Siu PM, Yip SP, **Yung BY**: Coexpression Pattern Analysis of NPM1-Associated Genes in Chronic Myelogenous Leukemia. *BioMed research international* 2015, 2015:610595 (2015).
- Sin TK, Yu AP, **Yung BY**, Yip SP, Chan LW, Wong CS, Rudd JA, Siu PM: Effects of long-term resveratrol-induced SIRT1 activation on insulin and apoptotic signalling in aged skeletal muscle. *Acta Diabetol* 52(6):1063-1075 (2015).
- Wang FF, Cho WCS, Chan LWC, Wong SCC, Tsui NBY, Siu PM, Yip SP, **Yung B.Y.**: Gene Network Exploration of Crosstalk between Apoptosis and Autophagy in Chronic Myelogenous Leukemia. *BioMed research international* (2015).

- Yu A.P., Pei X.M., Sin T.K., Yip S.P., **Yung B.Y.**, Chan L.W., Wong C.S., Siu P.M. [D-Lys3]-GHRP-6 exhibits pro-autophagic effects on skeletal muscle. *Mol Cell Endocrinol* doi: 10.1016/j.mce.2014.09.031 (2014).
- Kang Y.L., Saleem M.A., Chan K.W., **Yung B.Y.**, Law H.K. Trehalose, an mTOR Independent Autophagy Inducer, Alleviates Human Podocyte Injury after Puromycin Aminonucleoside Treatment. *PLoS One* 9(11):e113520 (2014).
- Wang F., Chan L.W., Law H.K., Cho W.C., Tang P., Yu J., Shyu C.R., Wong S.C., Yip S.P., **Yung B.Y.** Exploring microRNA-mediated alteration of EGFR signaling pathway in non-small cell lung cancer using an mRNA:miRNA regression model supported by target prediction databases. *Genomics* doi: 10.1016/j.ygeno.2014.09.004 (2014).
- Pei X.M., **Yung B.Y.**, Yip S.P., Chan L.W., Wong C.S., Ying M., Siu P.M. Protective effects of desacyl ghrelin on diabetic cardiomyopathy. *Acta Diabetol* doi:10.1007/s00592-014-0637-4 (2014).
- Wang F., Chan L.W., Cho W.C., Tang P., Yu J., Shyu C.R., Tsui N.B., Wong S.C., Siu P.M., Yip S.P., **Yung B.Y.** Novel approach for coexpression analysis of E2F1-3 and MYC target genes in chronic myelogenous leukemia. *Biomed Res Int* 2014:439840 (2014).
- Chan L.W., Ngo C.H., Wang F., Zhao M.Y., Zhao M., Law H.K., Wong S.C., **Yung B.Y.** Disease-specific target gene expression profiling of molecular imaging probes: database development and clinical validation. *Mol Imaging* doi: 10.2310/7290.2014.00017 (2014).
- Wang F., Wong S.C., Chan L.W., Cho W.C., Yip S.P., **Yung B.Y.** Multiple regression analysis of mRNA-miRNA associations in colorectal cancer pathway. *Biomed Res Int* 2014:676724 (2014).
- Chu H.C., Tseng W.L., Lee H.Y., Cheng J.C., Chang S.S., **Yung B.Y.**, Tseng C.P. Distinct effects of disabled-2 on transferrin uptake in different cell types and culture conditions. *Cell Biol Int* 38(11):1252-9 (2014).
- Yu A.P., Pei X.M., Sin T.K., Yip S.P., **Yung B.Y.**, Chan L.W., Wong C.S., Siu P.M. Acylated and unacylated ghrelin inhibit doxorubicin-induced apoptosis in skeletal muscle. *Acta Physiol* 211(1):201-13 (2014).
- Tsang A.H., Cheng K.H., Wong A.S., Chan C.M., Tsui N.B., Au T.C., Chan A.K., Luk L.Y., Cheung M.T., Chan L.W., **Yung B.Y.** & Wong S.C. Current and future molecular diagnostics in colorectal cancer and colorectal adenoma. *World J Gastroenterol* 20(14):3847-57 (2014).
- Kang Y.L., Saleem M.A., Chan K.W., **Yung B.Y.** & Law H.K. The cytoprotective role of autophagy in puromycin aminonucleoside treated human podocytes. *Biochem Biophys Res Commun* 443, 628-34 (2014).
- Pei X.M., **Yung B.Y.**, Yip S.P., Ying M., Benzie I.F. & Siu P.M. Desacyl ghrelin prevents doxorubicin-induced myocardial fibrosis and apoptosis via the GHSR-independent pathway. *Am J Physiol Endocrinol Metab* 306:E311-23 (2014).
- Lam E.P., Chan C.M., Tsui N.B., Au T.C., So C.C., Wong K.F., Wong H.T., Chiu K.Y., Chan L.W., **Yung B.Y.** & Wong S.C. Clinical applications of molecular technologies in hematology. *J Med Diagn Meth* 2:130 (2013).
- Chan C.M., Au T.C., Chan A.T., Ma B.B., Tsui N.B., Ng S.S., Hui E.P., Chan L.W., Ho W.S., **Yung B.Y.** & Wong S.C. Advanced technologies for studying circulating tumor cells at the protein level. *Expert Rev Proteomics* 10:579-89 (2013).
- Sin T.K., Pei X.M., Teng B.T., Tam E.W., **Yung B.Y.** & Siu P.M. Oxidative stress and DNA damage signalling in skeletal muscle in pressure-induced deep tissue injury. *Pflugers Arch* 465:295-317 (2013).

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- Tan, B.C., Yang, C.C., Hsieh, C.L., Chou, Y.H., Zhong, C.Z., **Yung, B.Y.*** & Liu, H. Epigenetic silencing of ribosomal RNA genes by Mybbp1a. *J Biomed Sci* 19, 57 (2012).
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