

Publications

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Kosok M, Alli-Shaik A, Bay BH, Gunaratne J.

Comprehensive Proteomic Characterization Reveals Subclass-Specific Molecular

Aberrations within Triple-negative Breast Cancer

iScience Jan 27, 2020 DOI:<https://doi.org/10.1016/j.isci.2020.100868>

2019

Wee S, Alli-Shaik A, Kek R, Swa HLF, Tien WP, Lim VW, Leo YS, Ng LC, Hapuarachchi HC, Gunaratne J.

Multiplex targeted mass spectrometry assay for one-shot flavivirus diagnosis.

Proc Natl Acad Sci U S A. 116:6754-6759

Media releases:

[Commentary by Proteomics expert Professor Ruedi Aebersold: https://research.a-star.edu.sg/articles/highlights/a-one-shot-assay-for-flavivirus-identification/](https://research.a-star.edu.sg/articles/highlights/a-one-shot-assay-for-flavivirus-identification/)

[Genomeweb 360Dx: https://www.360dx.com/mass-spec/proteomic-test-diagnose-differentiate-zika-dengue-developed-a-star-team#.XJrqvVUzZhE](https://www.360dx.com/mass-spec/proteomic-test-diagnose-differentiate-zika-dengue-developed-a-star-team#.XJrqvVUzZhE)

Others: Eurekalert, Singapore Straits Times, Zaobao, SingHealth, SG press centre, BioSpace, Health Care Today and BioSpectrum Asia

Lin Q, Low LWL, Lau A, Chua EWL, Matsuoka Y, Lian Y, Monteiro A, Tate S, Gunaratne J*, Carney TJ*. *co-corresponding authors.

Tracking genome-editing and associated molecular perturbations by SWATH mass spectrometry.

Sci Rep. 9(1):15240

Lim JP, Nair S, Shyamasundar S, Chua PJ, Muniasamy U, Matsumoto K, Gunaratne J*, Bay BH.*

*co-corresponding authors

Silencing Y-box binding protein-1 inhibits triple-negative breast cancer cell invasiveness via regulation of MMP1 and beta-catenin expression.

Cancer Lett. 452:119-131

Fernando BNTW, Alli-Shaik A, Hemage RKD, Badurdeen Z, Hettiarachchi TW, Abeysundara HTK, Abeysekara TDJ, Wazil A, Rathnayake S, Gunaratne J, Nanayakkara N.
Pilot Study of Renal Urinary Biomarkers for Diagnosis of CKD of Uncertain Etiology.
Kidney Int Rep 4, 1401–1411

Mohd-Ismail NK, Lim Z, Gunaratne J, Tan YJ.
Mapping the Interactions of HBV cccDNA with Host Factors.
Int J Mol Sci. 20(17). pii: E4276. doi: 10.3390/ijms20174276. Review.

Khattar E, Maung KZY, Chew CL, Ghosh A, Mok M, Lee P, Zhang J, Chor WHJ, Cildir G, Wang C, Mohd-Ismail NK, Chin D, Lee SC, Yang H, Shin YJ, Nam DH, Chen L, Kumar A, Deng LW, Ikawa M, **Gunaratne J**, Osato M, Tergaonkar V
Rap1 regulates hematopoietic stem cell survival and affects oncogenesis and response to chemotherapy.
Nat Commun 10(1):5349.

Bai B, Yang W, Fu Y, Foon HL, Tay WT, Yang K, Luo C, Gunaratne J, Lee P, Zile MR, Xu A, Chin CWL, Lam CSP, Han W, Wang Y.
Seipin Knockout Mice Develop Heart Failure With Preserved Ejection Fraction.
JACC Basic Transl Sci. 4(8):924-937

Liu Z, Liow SS, Lai, Alli-Shaik A, Holder GE, Parikh BH, Krishnakumar S, Li Z, Tan MJ, Gunaratne J, Barathi VA, Hunziker W, Lakshminarayanan R, Tan CWT, Chee CK, Zhao P, Lingam G, Loh XJ & Su X.
Retinal-detachment repair and vitreous-like-body reformation via a thermogelling polymer endotamponade.
Nat Biomed Eng. 3(8):598-610

Ng GY, Kang SW, Kim J, Alli-Shaik A, Baik SH, Jo DG, Hande MP, Sobey CG, Gunaratne J, Fann DY, Arumugam TV.
Genome-Wide Transcriptome Analysis Reveals Intermittent Fasting-Induced Metabolic Rewiring in the Liver.
Dose Response. 17(3):1559325819876780

Ong JWJ, Tan KS, Ler SG, Gunaratne J, Choi H, Seet JE, Chow VT.
Insights into Early Recovery from Influenza Pneumonia by Spatial and Temporal Quantification of Putative Lung Regenerating Cells and by Lung Proteomics.

Cells. 8(9). pii: E975. doi: 10.3390/cells8090975.

Palmer N, Talib SZA, Ratnacaram CK, Low D, Bisteau X, Lee JHS, Pfeiffenberger E, Wollmann H, Tan JHL, Wee S, Sobota R, Gunaratne J, Messerschmidt DM, Guccione E, Kaldis P. J

CDK2 regulates the NRF1/Ehmt1 axis during meiotic prophase I.
J Cell Biol. 218(9):2896-2918

2018

Chong PSY, Zhou J, Chooi JY, Chan ZL, Toh SHM, Tan TZ, Wee S, Gunaratne J, Zeng Q, Chng WJ. (2018)

Non-canonical activation of β-catenin by PRL-3 phosphatase in acute myeloid leukemia.
Oncogene. 38:1508-1519

Chen J, Rajasekaran M, Xia H, Kong SN, Deivasigamani A, Sekar K, Gao H, Swa HL, Gunaratne J, Ooi LL, Xie T, Hong W, Hui KM.

CDK1-mediated BCL9 phosphorylation inhibits clathrin to promote mitotic Wnt signalling.
EMBO J. 37(20).

Koh CWQ, Goh YT, Toh JDW, Neo SP, Ng SB, Gunaratne J, Gao YG, Quake SR, Burkholder WF, Goh WSS. (2019)

Single-nucleotide-resolution sequencing of human N6-methyldeoxyadenosine reveals strand-asymmetric clusters associated with SSBP1 on the mitochondrial genome.

Nucleic Acids Res. 46:11659-11670.

Jakhar R, Luijten MNH, Wong AXF, Cheng B, Guo K, Neo SP, Au B, Kulkarni M, Lim KJ, Maimaiti J, Chong HC, Lim EH, Tan TBK, Ong KW, Sim Y, Wong JSL, Khoo JBK, Ho JTS, Chua BT, Sinha I, Wang X, Connolly JE, Gunaratne J, Crasta KC.

Autophagy Governs Protumorigenic Effects of Mitotic Slippage-induced Senescence.

Mol Cancer Res. 16:1625-1640.

Liao KC, Chuo V, Ng WC, Neo SP, Pompon J, Gunaratne J, Ooi EE, Garcia-Blanco MA. Identification and characterization of host proteins bound to dengue virus 3' UTR reveal an antiviral role for quaking proteins.

RNA. 24:803-814

2017

Alli-Shaik A, Wee S, Lim LHK, Gunaratne J. (2017)
Phosphoproteomics reveals network rewiring to a pro-adhesion state in annexin-1-deficient
mammary epithelial cells.
Breast Cancer Res. 219:132.

Boopathy GTK, Lynn JLS, Wee S, Gunaratne J, Hong W. (2017)
Phosphorylation of Mig6 negatively regulates the ubiquitination and degradation of EGFR
mutants in lung adenocarcinoma cell lines.
Cell Signal. 43:21-31.

Tan KK, Ler SG, Gunaratne J, Bay BH, Ponnampalam G. (2017)
In vitro cytotoxicity of L-amino acid oxidase from the venom of *Crotalus mitchellii pyrrhus*.
Toxicon. 139:20-30.

Toloczko A, Guo F, Yuen HF, Wen Q, Wood SA, Ong YS, Chan PY, Shaik AA, Gunaratne J,
Dunne MJ, Hong W, Chan SW. (2017)
Deubiquitininating Enzyme USP9X Suppresses Tumor Growth via LATS Kinase and Core
Components of the Hippo Pathway.
Cancer Res. 77:4921-4933.

Lim JP, Shyamasundar S, Gunaratne J, Scully OJ, Matsumoto K, Bay BH. (2017)
YBX1 gene silencing inhibits migratory and invasive potential via CORO1C in breast cancer
in vitro.
BMC Cancer. 17:201

Singaravelu P, Lee WL, Wee S, Ghoshdastider U, Ding K, Gunaratne J, Grimes JM,
Swaminathan K, Robinson RC.(2017)
Yersinia Effector Protein YopO mediated Phosphorylation of Host Gelsolin Causes Calcium-
Independent Activation leading to Disruption of Actin Dynamics.
J Biol Chem. 292(19):8092-8100

Lee WL, Singaravelu P, Wee S, Xue B, Ang KC, Gunaratne J, Grimes JM, Swaminathan K,
Robinson RC. (2017)

Mechanisms of Yersinia YopO kinase substrate specificity.

Sci Rep. 7:39998.

2016

Asfa AS, Qiu B, Wee S, Choi H, Gunaratne J*, Tergaonkar V* (2016) * co-corresponding authors

Phosphoprotein network analysis of white adipose tissues unveils deregulated pathways in response to high-fat diet

Sci Rep. 6:25844

Bararia D, Kwok HS, Welner RS, Numata A, Sárosi MB, Yang H, Wee S, Tschuri S, Ray D, Weigert O, Levantini E, Ebralidze AK, Gunaratne J, Tenen DG (2016)

Acetylation of C/EBP α inhibits its granulopoietic function

Nat Commun. 7:10968

Ward AM, Calvert ME, Read LR, Kang S, Levitt BE, Dimopoulos G, Bradrick SS, Gunaratne J, Garcia-Blanco MA. (2016)

The Golgi associated ERI3 is a Flavivirus host factor.

Sci Rep. 6:34379

Diril MK, Bisteau X, Kitagawa M, Caldez MJ, Wee S, Gunaratne J, Lee SH, Kaldis P. (2016) Loss of the Greatwall Kinase Weakens the Spindle Assembly Checkpoint.

PLoS Genet. 12(9):e1006310

Dong JM, Tay FP, Swa HL, Gunaratne J, Leung T, Burke B, Manser E. (2016)

Proximity biotinylation provides insight into the molecular composition of focal adhesions at the nanometer scale.

Sci Signal. 9(432):rs4

Brichkina A, Nguyen NT, Baskar R, Wee S, Gunaratne J, Robinson RC, Bulavin DV. (2016)

Proline isomerisation as a novel regulatory mechanism for p38MAPK activation and functions.

Cell Death Differ. 23:1592-601

2015

Ng CT, Yung LY, Swa HL, Poh, RW, Gunaratne J*, Bay BH* (2015) *co-corresponding author

Altered protein expression profile associated with phenotypic changes in lung fibroblasts co-cultured with gold nanoparticle-treated small airway epithelial cells.

Biomaterials 39:31-8.

Kumar P, Nandi S, Tan TZ, Ler SG, Chia KS, Lim WY, Bülow Z, Vordos D, De la Taille A, Al-Haddawi M, Raida M, Beyer B, Ricci E, Colombel M, Chong TW, Chiong E, Soo R, Park MK, Ha HK*, Gunaratne J*, Thiery JP*. (2015) *co-senior authors

Highly sensitive and specific novel biomarkers for the diagnosis of transitional bladder carcinoma.

Oncotarget. 6:13539-49.

Ho L, Tan SY, Wee S, Wu Y, Tan SJ, Ramakrishna NB, Chng SC, Nama S, Sczernieska I, Chan W, Avery S, Tsuneyoshi N, Ng HH, Gunaratne J, Dunn NR, Reversade B.

ELABELA Is an Endogenous Growth Factor that Sustains hESC Self-Renewal via the PI3K/AKT Pathway (2015).

Cell Stem Cell 17:435-47

Yang BX, El Farran CA, Guo HC, Yu T, Fang HT, Wang HF, Schlesinger S, Seah YF, Goh GY, Neo SP, Li Y, Lorincz MC, Tergaonkar V, Lim TM, Chen L, Gunaratne J, Collins JJ, Goff SP, Daley GQ, Li H, Bard FA, Loh YH.

Systematic Identification of Factors for Provirus Silencing in Embryonic Stem Cells (2015)

Cell. 163:230-45

Lee J, Wee S, Gunaratne J, Chua RJ, Smith RA, Ling L, Fernig DG, Swaminathan K, Nurcombe V, Cool SM. Structural determinants of heparin-transforming growth factor- β 1 interactions and their effects on signalling (2015)

Glycobiology 25:149

Manokaran G, Finol E, Wang C, Gunaratne J, Bahl J, Ong EZ, Tan HC, Sessions OM, Ward AM, Gubler DJ, Harris E, Garcia-Blanco MA, Ooi EE. (2015)

Dengue subgenomic RNA binds TRIM25 to inhibit interferon expression for epidemiological fitness.

Science. 350:217-21

Koh HW, Swa HL, Fermin D, Ler SG, Gunaratne J, Choi H. (2015)
EBprot: Statistical Analysis of Labeling-based Quantitative Proteomics Data.
Proteomics 15:2580-91

Tan CL, Teissier S, Gunaratne J, Quek LS, Bellanger S. (2015)
Stranglehold on the spindle assembly checkpoint: the human papillomavirus E2 protein provokes BUBR1-dependent aneuploidy.
Cell Cycle. 14:1459-70.

Chakraborty S, Lakshmanan M, Swa H, Chen J, Zhang X, Ong YH, Loo LS, Akıncılar S, Gunaratne J, Tergaonkar V, Hui K, Hong W(2015)
An oncogenic role of Agrin in regulating focal adhesion integrity in Hepatocellular carcinoma.
Nat Commun. 6:6184

2014

Alli Shaik A, Wee S, Li RH, Li Z, Carney TJ, Mathavan S, Gunaratne J (2014)
Functional Mapping of the Zebrafish Early Embryo Proteome and Transcriptome.
J Proteome Res. 13:5536-50

Swa HL, Alli Shaik A, Lim, LH., Gunaratne J (2014)
Mass spectrometry-based quantitative proteomics and integrative network analysis accentuates modulating roles of Annexin-1 in mammary tumorigenesis.
Proteomics 15:408-18

Ward AM, Gunaratne J, Garcia-Blanco MA (2014)
Identification of dengue RNA binding proteins using RNA chromatography and quantitative mass spectrometry
Methods Mol Biol:1138:253-70

Zhang W, Neo SP, Gunaratne J, Poulsen A, Boping L, Ong EH, Sangthongpitag K, Pendharkar V, Hill J, Cohen SM (2014)
Feedback regulation on PTEN/AKT pathway by the ER stress kinase PERK mediated by interaction with the Vault complex.
Cell Signal. 27:436-42

Qiu B, Shi X, Wong ET, Lim J, Bezzi M, Low D, Zhou Q, Akıncılar SC, Lakshmanan M, Swa HL, Tham JM, Gunaratne J, Cheng KK, Hong W, Lam KS, Ikawa M, Guccione E, Xu A ,Han W, Tergaonkar V. (2014)

NUCKS is a positive transcriptional regulator of insulin signalling.

Cell Rep 7:1876-86

Huang YF, Wee S, Gunaratne J, Lane DP, Bulavin DV (2014)

Isg15 controls p53 stability and functions

Cell Cycle 13:2200-10

2013

Gunaratne J, Schmidt A, Quandt A, Neo SP, Sarac OS, Gracia T, Loguercio S, Ahrne E, Li Hai Xia R, Tan KH, Loessner C, Bahler J, Beyer A, Blackstock W, Aebersold R (2013)
Extensive Mass Spectrometry-Based Analysis of the Fission Yeast Proteome: The *S pombe* PeptideAtlas

Mol Cell Proteomics 12:1741-51

Zhang W, Hietakangas V, Wee S, Lim R, Gunaratne J, Cohen SM,(2013)

ER stress potentiates insulin resistance through PERK-mediated FOXO phosphorylation

Genes Dev 27:441-9

Bard-Chapeau EA, Gunaratne J, Kumar P, Chua BQ, Muller J, Bard FA, Blackstock W, Copeland NG, Jenkins NA (2013)

EVI1 oncoprotein interacts with a large and complex network of proteins and integrates signals through protein phosphorylation

Proc Natl Acad Sci U S A. 110:E2885-94

Xie Z, Gunaratne J, Cheong LL, Liu SC, Koh TL, Huang G, Blackstock WP, Chng WJ (2013)

Plasma membrane proteomics identifies biomarkers associated with MMSET overexpression in T(4;14) multiple myeloma

Oncotarget 4:1008-18

Lai D, Tan CL, Gunaratne J, Quek LS, Nei W, Thierry F, Bellanger S (2013)

Localization of HPV-18 E2 at Mitochondrial Membranes Induces ROS Release and Modulates Host Cell Metabolism

PLoS ONE 8: e75625

2012

Coffill RC, Muller PA, Oh HK, Neo SP, Hogue KA, Cheok CF, Vousden KH, Lane DP, Blackstock WP, Gunaratne J (2012)

Mutant p53 interactome identifies nardilysin as a p53R273H-specific binding partner that promotes invasion

EMBO Reports 13:638-44

Swa, HL, Blackstock W, Lim L, Gunaratne J (2012)

Quantitative proteomics profiling of murine mammary gland cells unravels impact of Annexin-1 on DNA damage, cell adhesion and migration

Mol Cell Proteomics 11:381-93

Lößner C, Wee S, Ler SG, Blackstock W, Gunaratne J (2012)

Analysis of the zebrafish embryo proteome using a multiple fractionation approach followed by tandem mass spectrometry

Proteomics 12:1879-82

Khong JH, Zhang T, Gunaratne J, Blackstock W, Surana U (2012)

"Reductional anaphase" in replication-defective cells is caused by ubiquitin-conjugating enzyme Cdc34-mediated deregulation of the spindle

Cell Cycle 11:2896-910

Chuang LSH, Lai LK, Murata-Hori M, Yamada A, Hoi-Yeung Li, Gunaratne J, Ito Y (2012)

RUNX3 interactome reveals novel centrosomal targeting of RUNX family of transcription factors

Cell Cycle 11:1938-47

Tan CL, Gunaratne J, Lai D, Carthagena L, Wang Q, Xue YC, Quek LH, Bachelerie F, Thierry F, Bellanger S (2012)

HPV-18 E2^E4 chimera: 2 new spliced transcripts and proteins induced by keratinocyte differentiation

Virology 429:47-56

Bard-Chapeau EA, Jeyakani J, Kok C, Muller J, Chua BQ, Gunaratne J, Batagov A, Jenjaroenpun P, Kuznetsov V, Wei C, D'Andrea R, Bourque G, Jenkins NA, Copeland NG

(2012)

EVI1 regulates multiple cellular processes important for cancer and is a synergistic partner for FOS in invasive tumors

Proc Natl Acad Sci U S A. 109: 2168-73

Migliori V, Muller J, Phalke S, Low D, Bezzi M, Mok WC, Sahu KS, Gunaratne J, Capasso P, Bassi C, Cecatiello V, De Marco A, Blackstock W, Kuznetsov V, Amati B, Mapelli M, Guccione E (2012)

Symmetric dimethylation of H3R2 is a newly identified histone mark that supports euchromatin maintenance

Nat Struct & Mol Biol 19:136-44

2011 & before

Lößner C, Blackstock W, Gunaratne J (2011)

Enhanced performance of Pulsed Q Collision Induced Dissociation-based peptide identification on a dual-pressure linear ion trap

J Am Soc Mass Spectrom 23:186-89

Ward AM, Bidet K, Yinglin A, Ler SG, Hogue KA, Blackstock WP, Gunaratne J, Garcia-Blanco M (2011)

Quantitative Mass Spectrometry of DENV-2 RNA-Interacting Proteins Reveals that the DEAD-box RNA helicase DDX6 Binds the DB1 and DB2 3' UTR Structures

RNA Biology 8:1173-86

Gunaratne J, Goh MX, Swa H L , Lee FY, Sanford E, Wong LM, Hogue K, Blackstock W, Okumura K (2011)

The protein interactions of PTEN and its cancer-associated G20E mutant compared by SILAC-based parallel affinity purification and mass spectrometry

J Biol Chem 286:18093-103

Chan SW, Lim CJ, Huang C, Chong YF, Gunaratne HJ, Hogue K, Blackstock W, Harvey KF, Hong W (2010)

WW Domain-mediated Interaction with Wbp2 is Important for Oncogenic Property of TAZ
Oncogene 30:600-10

For publications before joining IMCB, please visit Pubmed (keyword: Gunaratne H.J.)

Patents:

Biomarker discovery in the urine of early stage bladder cancer patients. Granted in 2019: USA (US 10s509s034 B2), Europe (#3066474), China (# CN 105899953B) & Japan (#6549570). Licensed in 2018, # PC/SW/2934/0518/ETPL-IMCB.

Novel tumour protein marker panels and TNBC sub-classification for improved breast cancer subtyping and patient stratification. Filed in Sep 2019, IMC/P/11239/00/SG