- Molecular/Precision Oncology
- Biology of Leukaemia/Cancer Stem Cells
- Leukaemia/Cancer Biomarkers
- DNA damage-induced leukaemia
- Therapeutic targets of leukaemia stem cells
- Cancer Stem Cells Bio-banking

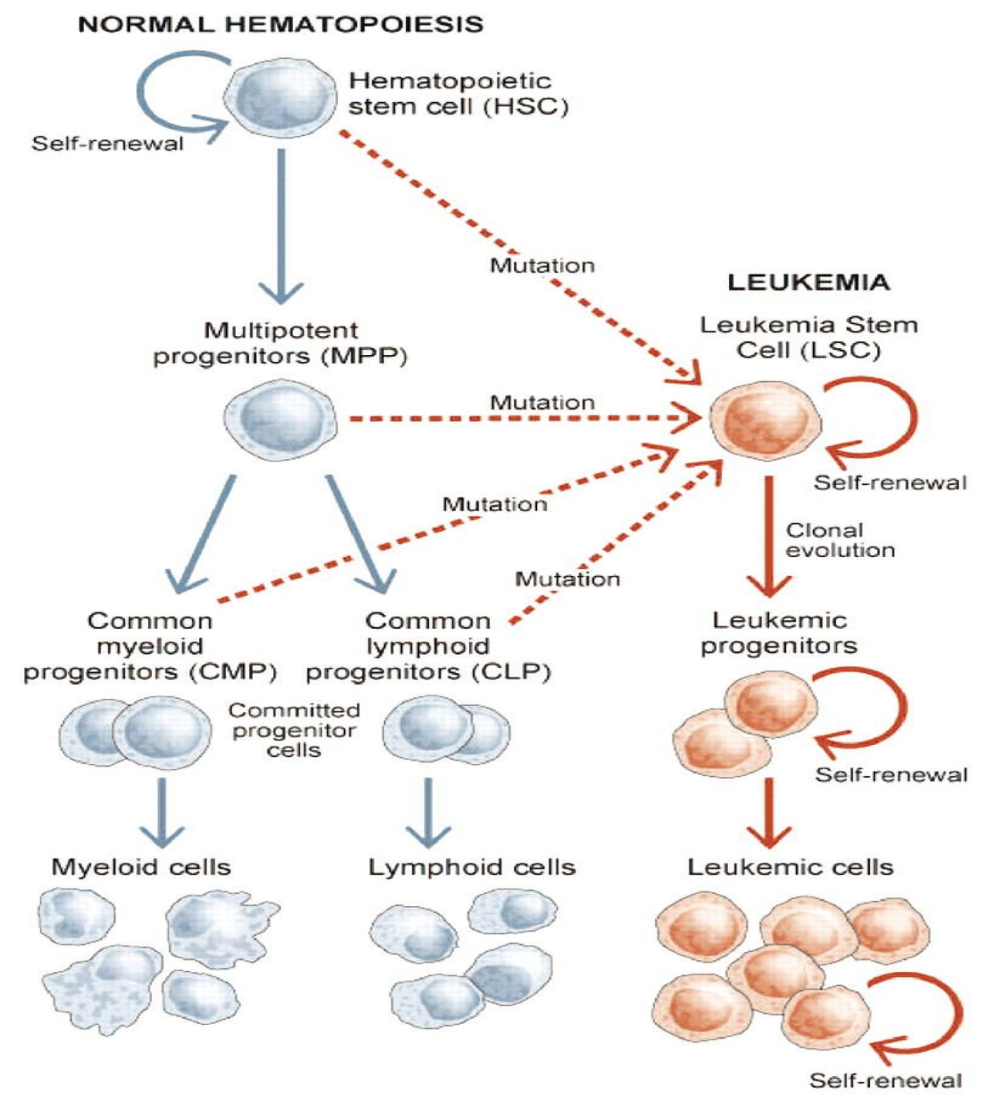
“ no conflict of interest”

อาจารย์ ดร. ธีระพงศ์ ศิริบูรณ์พิพัฒนา
วทบ. เทคนิคการแพทย์ มหาวิทยาลัยขอนแก่น
วทม. พยาธิวิทยาคลินิก มหาวิทยาลัยมหิดล
MRes in Biomedical Sciences (Biology of Cancer) The University of Liverpool, Liverpool, UK
Mphil/PhD in Cancer Studies Research, King’s College of London, London, UK

ห้องปฏิบัติการมนุษย์พันธุศาสตร์
(Human Genetics)


KCL, 2011-2014,
Biology of Leukaemia
Stem Cells
2009, The Royal Thai Government Scholarship,
Ministry of Science and Technology
U of LIV, 2010-2011,
Pharmacogenomics of
CML
KKU, 1998,
HLA,
Secretors
genotyping
MU 2002, Forensic
genetics & Molecular
oncology, Current boss

Concept of the origin of leukemia



"Leukemia initiating cell (LIC)/leukemia stem cell (LSC) can originate from both HSC and progenitor cells"

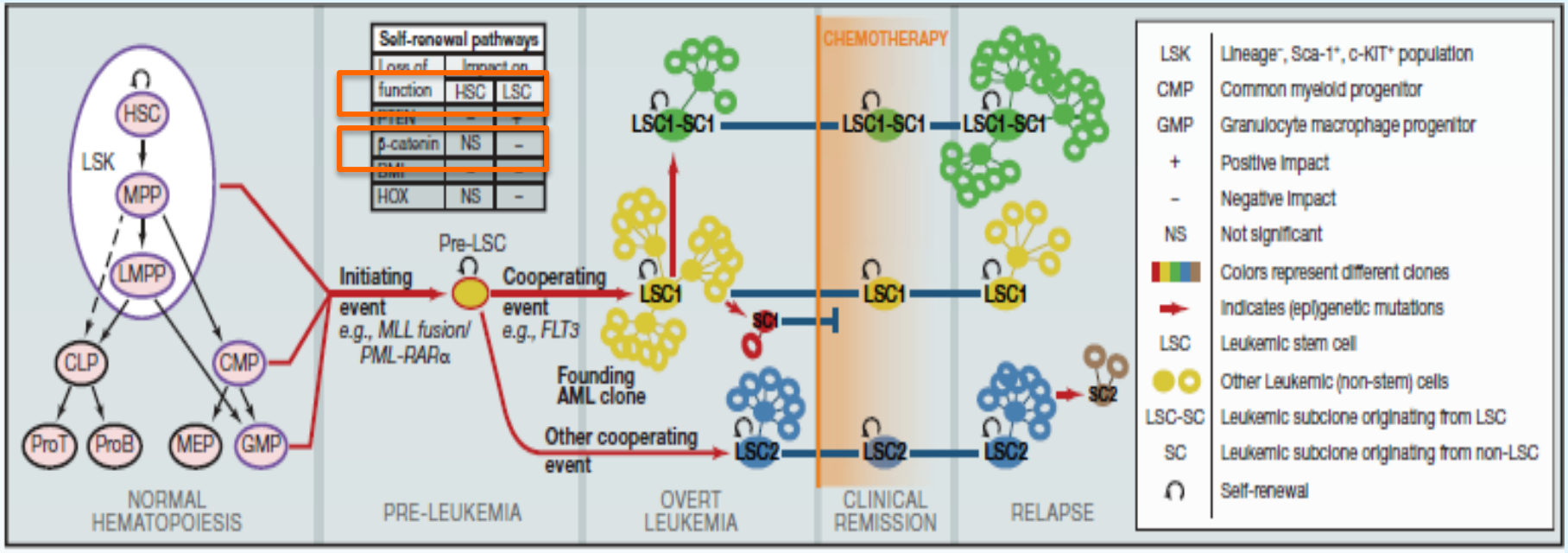
http://www.haematologica.org/content/95/2/293

Self-renewal is fundamental and essential property of normal and cancer stem cells, and is absent in their downstream progenitors

Both HSC and Progenitor cells can be targeted by initial events (e.g.,MLL fusions) to **become LSC** with acquisition of additional cooperative events (e.g. FLT3)

Self-renewal pathways such as **β-catenin and Hox**, which have differential effects on LSCs versus normal HSCs, may be **key targets to eradicate LSCs**

Cell of Origin and Clonal Evolution model of Leukaemia Stem Cells



Zeisig et al, Cancer Cell. 2012

PhD student

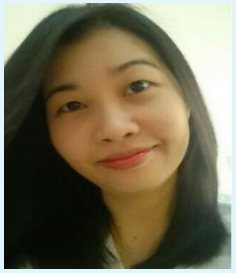
Signal transduction
JAK2, *KRAS*, and *CBL*

DNA methylation
DNMT3A, *TET2*, and *IDH1/2*

Transcriptional control
EVI1, RUNX1, andGATA2

Chromatin modification
EZH2 and *ASXL1*

DNA splicing
SF3B1, *U2AF1*, *SRSF2*, and *ZRSR2*

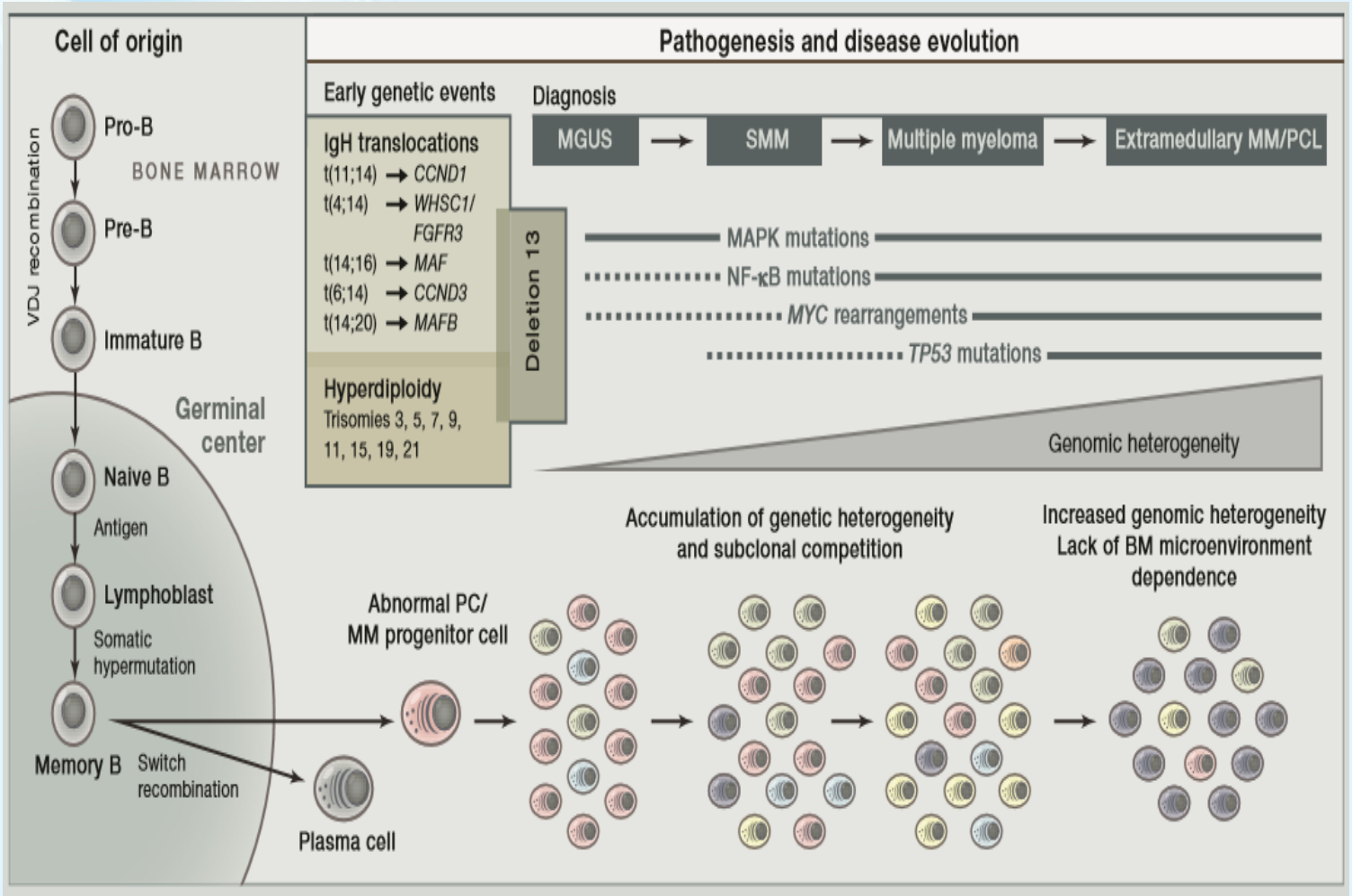


MSc student

"Recurrent somatic mutations in MDS"

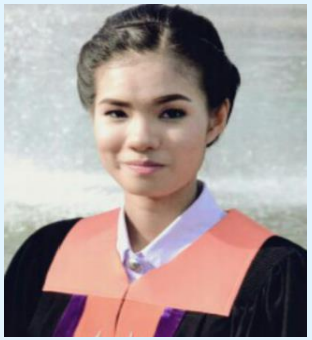
Papaemmanuil E, et al., Blood 2013

Biology of multiple myeloma



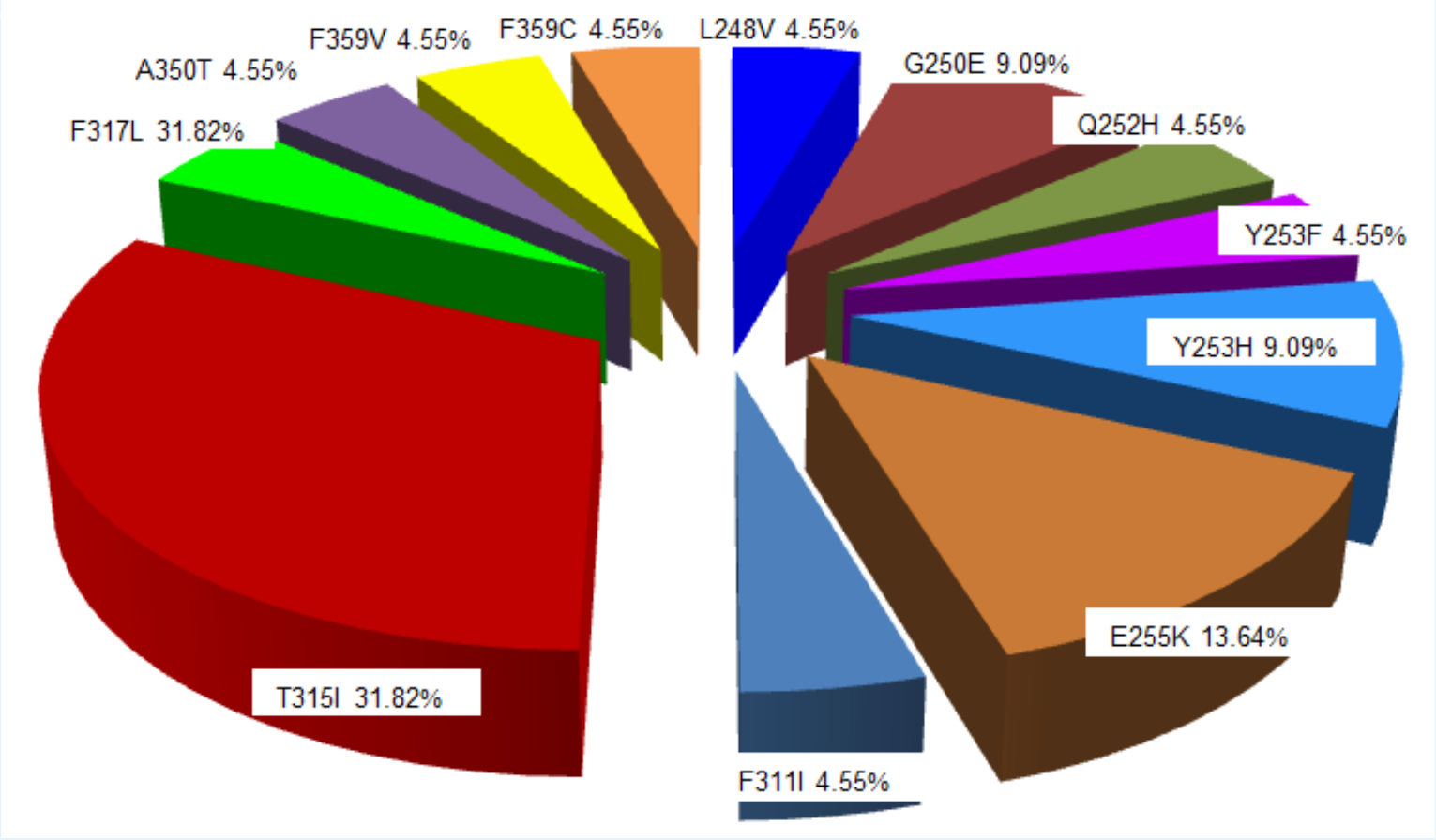
Cancer Cell *28*, November 9, 2015

PhD student



MSc student

Acquired mutations of ABL tyrosine kinase domain in Ph+ CML after treatment with TKI (Rama cases from 2010-2014)



Teerapong et al., unpublished data

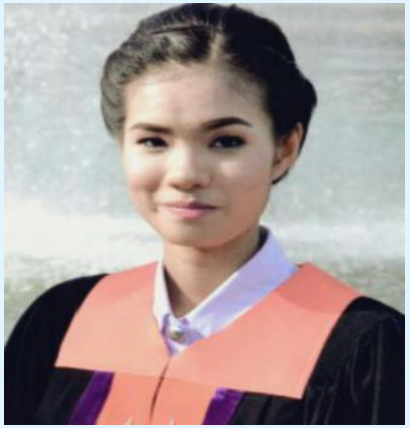
- ทุนอุดหนุนการวิจัยศูนย์มะเร็งคณะแพทยศาสตร์โรงพยาบาลรามาธิบดี
  - **The *JAK2*V617F mutation status and allele burden in Thai patients with polycythemia vera (PV) and essential thrombocythemia (ET) (published)**
  - **Correlation findings and frequency of *CALR* exon 9 mutations in wild type *JAK2* BCR-ABL negative MPN patients (under revision)**

- ทุนนักวิจัยใหม่กระทรวงวิทยาศาสตร์และเทคโนโลยี ปี พ.ศ.**2559**
  - **The detection of somatic TP53 mutation in multiple myeloma;**

    asking for research students

Current MSc students

RNA spliceosome mutations in MDS



Genetic alterations in multiple myeloma