

# BIOINFORMATICS CLUB

## Research Seminar

"Identification of Recurrent Tumor-specific Retained Intronic Events in Acute Myeloid Leukemia for Potential Effective Immunotherapy"

### Biography

Li Jia graduated with 1st Class Honors in Bachelor of Bioinformatics from Zhejiang University, and received her Ph.D. degree in Computational Biology from NUS Medical School. Her Ph.D. research thesis was focused on discovery of dysregulated alternative splicing events in human cancers based on large-scale RNA-seq data. After obtaining her Ph.D. degree in 2017, she took a cross-faculty research fellow position between CSI and Duke-NUS to pursue further her research interests in dysregulated alternative splicing in human diseases, particularly in cancer and obesity.



**DR. LI JIA**

Research Fellow, Cardiovascular & Metabolic Disorders  
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### Abstract

Acute Myeloid Leukemia (AML) is a genetically heterogeneous hematologic malignancy. Over the last few decades, although some mutations have been discovered and some of them were introduced into diagnostic tests, effective treatments without frequent relapse have not been achieved so far. In this work, we have studied splicing of AML transcriptome and found that intron retention widely existed in AML patients. By comparing ~1000 AML RNA-seq samples with 10+k RNA-seq samples of different normal tissues, we have discovered a large amount of AML tumor-specific intron retention events. Importantly some tumor-specific retained introns could be recurrently identified in 50+% AML patients. Such recurrence was not biased towards primary or relapsed samples, treatment responsive or non-responsive patients, leukemia stem cell enriched or depleted samples, and specific karyotypes. Furthermore, we showed that those recurrent intron transcripts could be potentially translated to a common set of AML-specific neoantigens. This means that a potential common neoantigen immunotherapy could be developed for a large fraction of AML patients, regardless of karyotyping, treatment outcome, and relapse status. Moreover, potentially effective AML vaccinations could be feasible for a wide range of population with a hope of effectively treating/eliminating an age-related disease.

**Register Here:**



Tuesday, 2 Aug 2022

3:00pm - 4:00pm

ZOOM

Chair: A/Prof. Henry Yang