CPH Seminar in Precision Medicine

TissGDB: Tissue specific Gene DataBase in Cancer

Pora Kim, Ph.D, MS

Post-doctoral Researcher in Bioinformatics
School of Biomedical Informatics
University of Texas Health Science Center at Houston

Tissue-specific gene expression is critical in understanding biological processes, physiological conditions, and disease. The identification and appropriate use of tissue-specific genes (TissGenes) will provide important insights into disease mechanisms and organ-specific therapeutic targets. To better understand the tissue-specific features for each cancer type and to advance the discovery of clinically relevant genes or mutations, we built TissGDB (Tissue specific Gene DataBase in cancer) available at http://zhaobioinfo.org/TissGDB. We collected and curated 2461 tissue specific genes (TissGenes) across 22 tissue types that matched the 28 cancer types of The Cancer Genome Atlas (TCGA) from three representative tissue-specific gene expression resources: The Human Protein Atlas (HPA), Tissue-specific Gene Expression and Regulation (TiGER), and Genotype-Tissue Expression (GTEx). For these 2461 TissGenes, we performed gene expression, somatic mutation, and prognostic marker-based analyses across 28 cancer types using TCGA data. Our analyses identified hundreds of TissGenes, including genes that universally kept or lost tissue-specific gene expression, with other features: cancer type-specific isoform expression, fusion with oncogenes or tumor suppressor genes, and markers for protective or risk prognosis. TissGDB provides seven categories of annotations: TissGeneSummary, TissGeneExp, TissGene-miRNA, TissGeneMut, TissGeneNet, TissGeneProg, TissGeneClin.

Friday, September 08, 2017. 12p – 1p. UCT1414

Arlisa.k.ross@uth.tmc.edu

713.500.3912

🐦 #SBMIseminar