Title: Evolutionary convergence between Human and Dog Mammary cancer

Name: Sadaf Ambreen, Yali Hou, Xuemei Lu

Key Laboratory of Genomic and Precision Medicine, Beijing Institute of Genomics, Chinese Academy of Sciences, Beijing, 100101, P.R. China

Understanding cancer development at the level of species as well as at the level of cells and tissues is crucial, for the development of effective therapies. The theory of evolution can be used to analyze the dynamics of tumor cell populations and to draw conclusions from molecular data on the evolutionary history of a tumor. Cancer development in an individual in many ways reflects the evolution of the species. Tumors are formed by mutation and selection on cells in a tissue, these evolutionary forces are integral part of carcinogenesis. Tumorigenesis is a reproducible evolutionary process, many driver genes disrupt cellular signaling pathways that are essential for multicellular organisms and involve in the evolution of multicellularity. Large areas of cancer development remain unexplored. The cross-species cancer genomics may offer new insights into cancer evolution. We are interested in exploring the development of cancer in different species such as Human and Dog. It has uncovered new aspects of cancer genes that are evolving in different species instantaneously. Whether convergence and selection in different mammals can be either strongly correlated or completely unrelated. Cancer development within an individual or in different species in the same organ may reflect convergent evolution. Collectively, this study suggests convergence of genetic changes in mammary cancer between species as well as demonstrate the difference involved in tumorigenesis.

Biography

I have recently finished my PhD in Bioinformatics (Genetics) from Beijing Institute of Genomics (BIG) Chinese Academy of Sciences, Beijing 100101 China. I completed my Bachelors and Masters in Bioinformatics from universities in Pakistan. I have sound biological background and applying computer science on biological data would be my greatest strength. My research experiences lies in the field of comparative and cancer genomics with extensive experience in whole-genome sequence analysis.

Full name: Sadaf Ambreen

Contact number: 00923317752942, 008613051632081 Twitter account: @sadaf34376757

Linked In account: linkedin.com/in/sadaf-ambreen-25892778

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