Submission Summary

Conference Name

International Conference on Nanoscience and Nanotechnology

Paper ID

158

Paper Title

Identification of nano-peptides affecting tumorigenesis from RNA-seq data

Abstract

Tumorigenesis, the process by which normal cells become malignant, is a complex phenomenon impacted by various genetic and environmental variables. While substantial research has shed light on the significance of coding genes in cancer development, non-coding RNA (ncRNA) have emerged as crucial participants in carcinogenesis. Non-coding RNA-encoded peptides (ncPEPs) are a recently discovered class of small peptides of length between 16 to 90 amino acids translated from ncRNAs. They originate directly from the translation of small open reading frames (smORFs), which reside inside ncRNAs, rather than from the breakdown of larger proteins. These ncPEPs have received interest due to their possible regulatory roles in cancer biology. Advancements in genomics have generated a large amount of transcriptomics data through various high-throughput methods such as microarray and next-generation sequencing (NGS).

In this study, we aim to utilize the vast available resource of RNA-Seq data in the public domain to provide a comprehensive overview of recent progress in identifying ncPEPs affecting tumorigenesis. We apply the available computational methods, tools, and algorithms to predict these ncPEPs.

In conclusion, we highlight the potential of using RNA-Seq data for identifying ncPEPs in carcinogenesis. These tiny peptides represent a new layer of cellular complexity, challenging our understanding of gene expression and opening possibilities for therapeutic intervention. Acknowledgment: We thank the Directorate of Research (DoR), Manipal Academy of Higher Education for providing us with the seed money (ID: 00000902) for funding this project. Also, we thank the Manipal School of Life Sciences, MAHE for providing the infrastructure necessary for the study.

Created on

2/10/2024, 7:39:45 PM

Last Modified

2/11/2024, 1:58:29 PM

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Submission Files

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