Abstract (600 word limits)

Cardiovascular diseases remain a leading cause of mortality worldwide. It is associated with multiple genetic and environmental factors that can only explain a small part of its variability. Epigenetic has emerged as one of the most promising areas that will address some of the gaps in our current knowledge in the development of many cardiovascular diseases. Epigenetic mechanisms include DNA methylation, chromatin alterations, histone modification, and microRNA. In this project, we are establishing a new epigenetic paradigm in regulating heart failure. We examined epigenetic changes in several histone modifications and chromatin remodeling factors in human failing hearts using specific expression arrays for epigenetic factors utilizing microarrays, ChIP-seq and ATAC-seq technologies. Afterwards, we elucidated the potential mechanism(s) by which these factors govern the process of gene expression and consequently the induction of cardiac hypertrophy cascade that leads to heart failure development. These findings will reveal novel epigenetic targets that will be involved in the regulation of heart failure. On the longer term, these findings will provide new insights into the molecular mechanism of the interplay between genetic and epigenetic factors, and may offer new approaches that can lead to innovative therapeutic tools

Recent Publications

1. D'Angelo G., Pilla R., Dean J.B. and Rampone S.Toward a soft computing-based correlation between oxygen toxicity seizures and hyperoxic hyperpnea Soft Computing: DOI 10.1007/s00500-017-2512-z(2017)

2. Pilla R. The ketogenic diet approach as metabolic treatment for a variety of diseases J. Epilepsy: 2:2 http://dx.doi.org/10.4172/2472- 0895.1000e010 (2016)

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4. Pilla R., Held H.E., Ciarlone G., Landon C.S. and Dean J.B. Female rats are more susceptible to central nervous system oxygen toxicity than male rats Physiol. Rep.: Apr 9;2(4):e00282. doi:10.14814/phy2.282 (2014)

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Biography [100 words]

Salma Mahmoud is the PI of Chromatin Dynamics and Epigenetic Research Program (CDERP) at Institute of Health Sciences in The University of Health Sciences, İstanbul, Turkey. She has completed

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References (With Hyperlink)

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