Abstract Template

Abstract Title: Targeting AMPK, mTOR and β-Catenin by Combined Metformin and Aspirin Therapy in HCC: An Appraisal to Egyptian HCC Patients

Doaa Ali Abdelmonsif[ab*], Ahmed S. Sultan[c], Wessam F. EL-Hadidy[d] and Dina Mohamed Abdallah[e]

[a] *Medical Biochemistry Department, Faculty of Medicine, Alexandria, Egypt*

[b] *Molecular Biology and Nanomedicine Labs, Centre of Excellence for Regenerative Medicine Research, Faculty of Medicine, Alexandria, Egypt.*

[c] *Biochemistry Department, Faculty of Science, Alexandria, Egypt*

[d] *Pharmacology and Experimental Therapeutics Department, Medical Research Institute, Alexandria, Egypt*

[e] *Pathology Department, Faculty of Medicine, Alexandria, Egypt*

Abstract (not more than 300 words)

Hepatocellular carcinoma (HCC) is an expanding health problem with a great impact on morbidity and mortality both in Egypt and worldwide. Recently, metformin and aspirin showed a potential anticancer effect on HCC although their mechanism(s) isn't fully elucidated. To investigate the anti-proliferative effects of combined metformin/ aspirin treatment against HCC, HepG2 cells were exposed to increasing concentrations of metformin, aspirin and combined treatment, and MTT assay was performed. Caspase-3 activity, cell cycle analysis, protein expression of phosphorylated AMP-activated protein kinase (pAMPK) and mammalian target of rapamycin (mTOR) proteins were assessed. Furthermore, the expression and localization of β-catenin protein was assessed by immunocytochemistry (ICC). Finally, protein expression of pAMPK, mTOR and β-catenin was assayed in Egyptian HCC and cirrhotic tissue specimens. Results showed that metformin/aspirin combined treatment had a synergistic effect on cell cycle arrest and apoptosis induction via down-regulation of AMPK activation and mTOR protein expression. Additionally, metformin/aspirin combined treatment enhanced cell-cell membrane localization of β-catenin expression in HepG2 cells, which might inhibit metastatic potential of HepG2 cells. In Egyptian HCC specimens, pAMPK, mTOR and β-catenin proteins showed a significant expression compared to cirrhotic controls. In conclusion, combined metformin/aspirin treatment could be a promising therapeutic strategy for HCC and specifically Egyptian HCC patients.

Keywords— AMPK, Aspirin, HCC, Metformin

Professional Biography (100-150 words)

Dr. Doaa Abdelmonsif is an assistant professor of Medical Biochemistry, Faculty of Medicine, Alexandria University, Egypt. She also works as the Executive Manager of the Common Facility Lab, Medical research center, Faculty of Medicine, Alexandria University, Egypt, the co-manager of the Molecular Biology Lab., Centre of Excellence for Regenerative Medicine Research& Applications (CERRMA), Alexandria University and a research associate of the Nanomedicine Lab., CERRMA. She completed her MD on pharmaco-genetic and epigenetic studies in breast cancer. Her research interest is in the fields of molecular biology, nanomedicine and oncology. She has several international publications in the fields of nanomedicine, oncology and molecular biology. Besides, many supervised theses in these research fields. She also serves as a reviewer for many peer-reviewed specialized journals and a member of molecular biology, oncology and nanomedicine societies.



Email Id: doaa.elmonsif@alexmed.edu.eg, doaa.elmonsif@yahoo.com

Any Comments:

Dear sir/mam,
Thank you for the kind invitation. I am interested in participating in this event and sharing my research. I was wondering about the availability of travel grants that cover the travel and conference attendance expenses. If so, please send me the required documents and further details about such grant.
Have a nice day