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Hypoxia inducible factors expression in lung adenocarcinoma cells

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Lung adenocarcinoma is one of the most deadly malignancies with a low survival rate.A typical characteristic of this tumor is angiogenesis which stimulates its growth. It is generate following hypoxia that induces activation of the hypoxia-inducible factors (HIFs) including HIF-1α, HIF-1β, HIF-2α, HIF-2β and HIF-3α. Previous studies have demonstrated the expression of these factors in lung adenocarcinomas [1-3]. In the present work we have analyzed their temporal expression profile in lung adenocarcinomas cells A549 by comparing it to that of normal bronchial epithelial cell lines BEAS-2B, during hypoxia with deferoxamine (DFX). This stressor induces a significant, time dependent, reduction of viabilityin both cell lines but more evident in BEAS-2B as shown by MTT analysis. Expression profile of HIFs members was assessed by Western blot analysis. During hypoxia HIF-1α expression increased in both cell lines, with a peak after 6h to 48h and then decreased significantly at 72h following treatment with DFX. HIF-1β levels reached a peak after 72h of treatment in both A549 and BEAS-2B cells, whereas HIF-2βsignificantly increases at 6h in A549 and at 72h in BEAS-2B of hypoxia. HIF-3α expression levels were inversely linked to those of HIF-1α in A549 while this correlation was absent in BEAS-2B. These data were also visualized by immunofluoerescence analysis. The present results have confirmed the involvement of HIFs members in lung cancer.

References

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Keywords
Hypoxia; HIFs member; A549 cells; Beas-2b cells; lung cancer.