

## عنوان مقاله:

Investigation of the anti-fibrotic effect of Pirfenidone on paraquat-induced pulmonary fibrosis with evaluation of Epithelial-Mesenchymal Transition (EMT) in in vitro studies on A549 cell line

## محل انتشار:

پانزدهمین همایش سراسری سم شناسی ایران (سال: 1398)

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## خلاصه مقاله:

**Background:** In this study we investigated the protective effects and possible mechanisms of pirfenidone (PF) in paraquat (PQ)-induced lung injury and fibrosis in A549 cell line. Pulmonary fibrosis (PF) is a chronic, progressive lung disease, characterized by excessive matrix formation, destruction of the normal lung architecture, dysfunction and finally death. The epithelial-to-mesenchymal transition (EMT) is a well-known prerequisite for cancer cells to acquire the migratory and invasive capacity, and to subsequently metastasize. Paraquat (PQ), as one of the most widely used herbicides in the world, can cause severe lung damage in humans and animals. PQ induces pulmonary fibrosis through epithelial to mesenchymal transition (EMT) characterized by increased number of myofibroblasts. **Methods:** This study investigated the underlying mechanism of PQ-induced lung cell damage and the protective role of pirfenidone. Cytotoxicity of PQ in A549 cells were investigated after 24 hr. and the effect of PQ on the migratory ability of A549 cells were measured. For investigate the protective effects of pirfenidone the cell were treated with different concentration of it. **Conclusion:** It was demonstrated that pirfenidone is able to significantly suppress the proliferation and migration formation of PQ-induced lung injury in vitro and these results suggest that pirfenidone may exert protective effects against A549 cells underwent EMT in the presence of PQ. **Keywords:** Pirfenidone, Paraquat, Pulmonary fibrosis, EMT

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