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Title: Collagen V activation and matrix extracellular remodeling mediated pulmonary fibrosis in experimental models of bleomycin and 3-5-di-tert-4-hidroxitoluene

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Body: Background: Fibrosing lung diseases are a serious problem to health and are ranked high among chronic degenerative diseases due to its morbidity. Certainly extracellular matrix (ECM) contribute to activation of fibroblasts/myofibroblasts with altered expression of their biomechanical properties, modulated by changes in the activity of immunomodulatory receptors that generate or disruption of normal spatial formation of these cells, contributing in the production of collagen fibers. The aim of this study was to evaluate the participation of collagen fibers, such as collagen I, III and V in experimental models of fibrosing diseases induced by bleomycin (BLM) and 3-5-di-tert-4-Hidroxitoluene (BHT). Methods: Male mice, aged 4 to 6 weeks-old, were divided into three groups: control (n=10), BLM (n=10) and BHT (n=10). Immunofluorescence and histomorphometry by image analysis were used to evaluate the amount of collagen I, III and V and hidroxyproline to evaluate the amount of total collagen. Results: The amount of collagen I (p=0.01), III (p=0.002) and V (p=0.002) expression were significantly increased and directly associated with severe fibrosis in BLM and BHT when compared with control group. Similar situation was observed in total collagen evaluated by hidroxyproline in BLM (p=0.02) and BHT (p=0.02). Conclusions: The higher expression of collagen I, III and V by myofibroblast cells have impact in the remodeling process evolution, suggesting that strategies aimed at preventing the effect of these ECM components may have a greater impact in patients with pulmonary fibrosis. Financial Support: FAPESP, CNPq.