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**Title:** The role of expression of TLR 4 in bleomycin-induced pulmonary fibrosis in mice

Dr. Dan 1029 Li lisa05@yeah.net MD <sup>1</sup>, Dr. Liping 1051 Peng pengliping64@yahoo.cn MD <sup>1</sup>, Dr. Haibo 1052 Yuan hbyuan0416@yahoo.com.cn MD <sup>1</sup>, Dr. Lei 1053 Yu yulei76516@yahoo.com.cn MD <sup>2</sup> and Prof. Shucheng 1054 Hua shuchenghua@eyou.com MD <sup>1</sup>. <sup>1</sup> Pulmonary Division, The First Hospital of Jilin University, Changchun, Jilin, China, 130021 and <sup>2</sup> Department of Physiology, Norman Bethune Medical School, Jilin University, Changchun, Jilin, China, 130021 .

**Body:** Objective To investigate the role of Toll-like receptor 4(TLR-4) in mice with lung fibrosis induced by bleomycin. Method Sixty mice were equally randomized into two groups, the lung fibrosis model was established by intratracheal lavage of bleomycin (5mg/kg) in lung fibrosis group, the control group was given saline instead of bleomycin. On the 7, 14 and 21 days, The mRNA and protein expressions of TLR4 in lung tissue were assessed by real-time polymerase chain reaction(Real-time PCR) and western blot, respectively. In addition, the lung pathological changes were observed on collagen content, neutrophil and monocyte accumulation, and pulmonary fibrosis. Results Lung injury scores of lung fibrosis for 14 days and 21 days were significantly higher than that of the control group(P<0.05). TLR4 mRNA expression in lung fibrosis group was significantly higher than that in the control group, and reached the peak by 21 days (P < 0.05). TLR4 protein expression was increased in lung tissues compared with the control group, and peaked at 14 days and 21 days. Conclusion These results indicate that TLR4 play an important role in lung inflammation after chemical-induced lung injury. In addition, TLR4 was activated again in the lung fibrosis period, which imply a novel concept for TLR4 in the pathophysiology of lung fibrosis.