Chitotriosidase in the pathogenesis of inflammation, interstitial Lung diseases and COPD

Abstrak

As a member of 18 glycosyl hydrolase(GH), chitotriosidase (Chitinase 1, CHIT1) is a true chitinase mainly expressed in the differentiated family polarized macrophages. CHIT1 is an immune mediator that digest the cell walls of chitin-containing eukaryotic pathogens, such as fungi. These However CHIT1 is dysregulated in granulomatous and fibrotic interstitial lung diseases characterized by inflammation and tissue remodeling. These include tuberclosis, sarcoidosis, idiopathic pulmonary fibrosis interstitial lung diseases(SSc-ILD) and chronic obstructive of lung diseases(COPD). CHIT1 serum correlates with the progression or the severity of these diseases, suggesting a potential use of CHIT1 as a biomarker or a therapeutic target. concentration genetically modified mice demonstrate that CHIT1 enhances TGF-A1 receptor Recent studies with genetically modified mice demonstrate that CHIT1 enhances TGF-beta1 receptor expression and signaling, suggesting a role in initiating or amplifying the response to organ injury and repair. This additional activity is independent of its enzymatic activity. These studies suggest that CHIT1 serves a bridging function; it is both an innate immune mediator and regulator of COPD enzymatic These studies suggest that CHIT1 serves a bridging and tissue remodeling. This review will focus on recent data linking CHIT1 to the pathogenesis of inflammation, interstitial lung disease, and COPD.