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Anti-inflammatory and lung epithelial functional recovery effect of a novel Phytomarine Senolytic against lipopolysaccharide- induced pulmonary injury mimicking COPD

Abstract:

Aim: This study deals with the induction of LPS-induced COPD animal model and treating this condition using a novel Phytomarine Senolytic PS compound (Bloomin'Age, Science of Living, Milan Italy) that had been previously shown in vitro to possess significant senolytic anti-inflammatory properties as well as vitagenes upregulator and (non tumorigenic) stem cell activation.

Methods: Mice received intra-nasally LPS (1 mg/ml/day) for 4 weeks followed by the oral administration of R-L compound (50 mg/kg body weight intermittently. Broncho-alveolar lavage fluids (BALF) as well as the lung tissues were collected from the control and experimental groups for histological examination. Likewise, the lung tissue homogenate was assayed for myeloperoxidase (MPO) assay, superoxide dismutase (SOD) activity and elastase assay. Concomitantly, Sp02 was monitored during LPS induction and for 4 weeks later.

Results: LPS- induced mice showed an increased inflammatory cell infiltration with an acute and persisting neutrophilic accumulation in the lung parenchyma with alveolar congestion. The influx of macrophages, lymphocytes as well as inflammatory mediators was observed during the BALF analysis. PS compound treatment caused a significant decline in the permeation of inflammatory cells as observed by lung histology and BALF analysis. Interestingly, when stopping LPS there was no sign of Sp02 recovery whereas PS-treated mice gradually normalised their values.

Conclusion: These data overall the robust anti-inflammatory/ antioxidant properties of PS and strongly suggested a functional lung epithelia functional regenerative capacity. Further studies may help understanding its potential as a therapeutic option in clinical setting.

Biography

MD, MS & PhD (Japan), MACG (USA). Fellow in gastroenterology at Chicago Univ., Univ. of Cape-Town. Fellow of Japanese Min. of Science at Natl. Cancer Center, Tokyo. Member of the Chinese Society of pancreatology, Molecular biology stage in UK and Korea. Hon. Research Professor Texas W University, USA and Visiting prof. Sichuan University, China and at major institutes worldwide. Has directed a research center in Japan and cooperated with (Nobel) Prof. Montagnier for 10 years. Has received 17 international awards, co-edited 2 successful books on aging-intervention and 15 book chapters on probiotics, functional foods, peptides and approaches for longevity promotion.