1	Immunomodulatory Effects of Polysaccharides from
2	Auricularia auricular and Lentinula edodes on Raw 264.7 Macrophages
3	2024/03/06
4	劉承賢(5131)
5	Outline
6	1. Introduction
7	2. Isolation, purification, characterization, and immunomodulatory effects of polysaccharide
8	from Auricularia auricula on RAW264.7 macrophages
9 10	3. Comparison of immunomodulatory effects of three polysaccharide fractions from <i>Lentinula edodes</i> water extracts
11	4. Conclusion
12	Abstract
13 14 15	<i>Auricularia auricula</i> and <i>Lentinula edodes</i> are edible fungi widely consumed. Research has indicated that their polysaccharide possess immunomodulatory activities; however, studies exploring the correlation between their molecular weight and immunomodulatory efficacy are
16	limited. Structural characteristics revealed that Auricularia auricula polysaccharide (AAP) was
17 18	a homogeneous galactan comprising mannose, rhamnose, gluconic acid, glucose, galactose,
18 19	arabinose, and fucose, and the average molecular weight is approximately 23.51 kDa. At concentrations of 0.3-0.5 mg/ml, AAP does not produce toxicity in RAW 264.7 cells. After
20	adding AAP, the increase in NO release from the RAW 264.7 cells does not lead to excessive
21	inflammatory responses. The addition of AAP significantly increased the phagocytosis of
22	RAW264.7 macrophage cells. AAP can induce the production of pro-inflammatory cytokines
23	such as TNF- $\alpha$ and IL-6. Chen <i>et al.</i> (2020) isolated three polysaccharide fractions (F1, F2 and
24	F3) from L. edodes. The molecular weights of F1, F2, and F3 are 136 kDa, 14-61 kDa, and 14-
25	35 kDa, respectively. F1 only had significant effects in increasing thymus index, DTH and
26	proliferation of T splenocytes, while F2 and F3 had broader effects e.g. increasing thymus
27	index, DTH, proliferation of T splenocytes, the content of IgM in serum and splenic NK
28	cytotoxic activity. Smaller molecular weight polysaccharides are likely more easily absorbed
29	and utilized, and can more readily enter cells to promote the proliferation and differentiation
30	of immune cells. This suggests that smaller molecular weight polysaccharides may have a more
31	favorable effect on immunomodulatory activity.
32	

and
son of
lodes