Abstract

Biologically active peptides released by proteins are important in regulating immunity. The purpose of this study was to isolate and purify an immunologically active peptide from Hericium erinaceus (H. erinaceus) and to explore its effect on cytokine secretion and differentiation of macrophages. An active peptide with an amino acid sequence, Lys-Ser-Pro-Leu-Tyr (KSPLY) was obtained from H. erinaceus protein by ultrafiltration combined with multistage chromatography separation and identification technology. Subsequently, it was confirmed that the synthetic peptide KSPLY had a good immunomodulatory activity at a concentration of 100 μmol/L and could promote the secretion of NO, IL-1β, IL-6 and TNF-α by macrophages. The effects of KSPLY on M1 macrophages and M2 macrophages were also studied. Results showed that KSPLY inhibited the secretion of NO and IL-6 by M1 macrophages and promoted the tendency of M2 macrophages to transform to M1 macrophages. Therefore, it can be concluded that KSPLY is an effective immunomodulatory peptide that may be beneficial in cancer treatment and human health improvement