Potent antibacterial peptides From Enzymatically Hydrolyzed Hen Egg White Lysozyme

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Abstract

Egg white is considered as a rich source of high quality proteins with various bioactive peptide. It considers the richest source of lysozyme which is a bacteriolytic enzyme. Our target was to produce potent peptides with cheap and simple method from lysozyme as a natural food preservative for further application in food. Lysozyme is mostly active against Gram positive bacteria than Gram negative bacteria. Various strategies have been used to increase antimicrobial activity of lysozyme against gram-negative bacteria. Enzymatic hydrolysis of proteins can be used to release bioactive fractions using different enzymes to release bioactive fractions. Due to increasing demand for natural food preservatives, lysozyme has become increasingly important in food processing. Therefore, there is a need to develop an efficient and simple methodology for increasing its activity. So this research study the activity of lysozyme hydrolysates under different pH values using pepsin then determine the antibacterial using liquid broth method and determine the lytic activity. We found that lysozyme hydrolysates under pH 3.0 Lzp3 gave the most antibacterial active peptide against gram negative bacteria with more potency against gram positive bacteria. On conclusion Lzp3 contains bioactive peptides that can be applied for safety food biopreservation.

Key words: Lysozyme, peptic hydrolysis, lytic activity, antibacterial activity.