

高压脉冲电场 (PEF) 对溶菌酶抑菌活性的影响

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摘要

研究了不同脉场强度和脉冲数对溶菌酶抑菌能力的影响。结果表明, 随着脉冲强度的增加, 溶菌酶抑菌能力呈波浪式变化, 在25 kV/cm时, 抑菌能力达到最大值, 比对照组提高了10.6%。PEF处理后溶菌酶液放置于4 °C下贮藏1 h和10 h后, 溶菌酶抑菌能力都有增加, 变化规律和PEF处理后直接测得的结果相似, 而随着贮藏时间的延长溶菌酶的抑菌能力又有下降趋势。在设定的脉冲数内, 脉冲数的变化对溶菌酶抑菌能力的影响不显著。荧光分析表明, 25 kV/cm下相对荧光强度最大, 比对照组提高了15.42%; 但贮藏一段时间后相对荧光强度有下降的趋势。在设定的脉冲数内, 脉冲数的变化对溶菌酶的相对荧光强度影响不显著。

关键词 [食品加工技术](#) [高压脉冲电场 \(PEF\)](#); [溶菌酶](#); [抑菌活性](#); [结构](#)

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Effect on antibacterial activity of lysozyme in high intensity pulsed electric fields (PEF)

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Abstract

The influence of different pulsed electric fields intensity and pulsed electric fields numbers on antibacterial activity of lysozyme were researched in this paper. Results showed antibacterial activity of lysozyme changed in the form of waves with the increase of pulsed intensity. Antibacterial activity of lysozyme reached the maximum value in 25 kV/cm, which increased 10.6% of that of comparative sample. After handled by PEF and then stored for 1h and 10 h separately at 4 °C, antibacterial activity of lysozyme increased somewhat. The change regulation was similar to the directly determined one. With longer store time, however, antibacterial activity of lysozyme decreased. At set pulsed numbers, the influence of different pulse numbers on antibacterial activity of lysozyme were not significant. Fluorometric analysis shows that in 25 kV/cm, relative intensity of fluorescence increase 15.42% of that of comparative sample. But after stored for a time, relative intensity of fluorescence has the tendency of decrease. At set pulsed numbers, the influence of different pulsed numbers on relative fluorescence intensity is insignificant.

Key words [food processing technology](#) [high intensity pulsed electric fields \(PEF\)](#) [lysozyme](#) [antibacterial activity structure](#)

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