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[1]蔡燕,方云,孟君.大豆脂氧酶催化亚油酸氢过氧化反应产物的漂白特性[J].大豆科学,2007,26(02):235-239.  
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## 大豆脂氧酶催化亚油酸氢过氧化反应产物的漂白特性

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摘要: 利用大豆脂肪氧合酶催化氧化亚油酸可以生成氢过氧化亚油酸(LA-HPOD),后者是一种兼具低温漂白/洗涤双重功效的新型油脂基多功能表面活性剂。开发LA-HPOD将大为提高生物技术在大豆加工中的应用水平和对大豆资源的高附加值利用水平。将LA-HPOD用于漂白洗涤剂配方,能促进漂白型洗涤剂向绿色、温和、多功能化方向发展。LA-HPOD在低于60℃时处于稳定状态,80℃时开始分解,至120℃完全分解。LA-HPOD漂白亚甲基蓝的合适质量分数为0.2%左右,作用0.5h后已显示良好的漂白效果。在pH11,60℃下,作用0.5h后,LA-HPOD的亚甲基蓝漂白率可接近100%;同期30℃下亚甲基蓝漂白率40%左右。与PBS、PCS相比,LA-HPOD的低温漂白效果最佳。动力学研究表明LA-HPOD对亚甲基蓝的漂白反应属拟二级反应。

Abstract: Lipoxygenase obtained from soybeans can catalyze the oxidation of linoleic acid to linoleic acid hydroperoxide (LA-HPOD), the latter is a new type of soybean oil-derived multifunctional surfactant having both bleaching and washing performances at lower temperature. In this paper, the thermal stability of LA-HPOD, as well as its bleaching effect on methylene blue was investigated. LA-HPOD decomposed completely at 120 °C but kept stable at 60 °C. The bleaching rate of methylene blue reached nearly 100% at 60 °C, pH11 in 0.5 h, while 40% at 30 °C in 30min. Comparing with commonly used sodium perborate and sodium percarbonate, LA-HPOD performed the best on bleaching methylene blue. The bleaching of methylene blue by LA-HPOD follows second order reaction kinetics.

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