

农产品辐照研究 · 食品科学

食品辐照标志物DiHT的人工抗原合成及鉴定

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摘要:

以二氢脱氧胸腺嘧啶(DiHT)为初始反应物,应用琥珀酸酐法合成二氢脱氧胸腺嘧啶的衍生物,即半抗原DiHT-COOH,经薄层色谱(TLC)和核磁共振波谱(NMR)对其进行鉴定;采用混合酸酐法与活化酯法分别将半抗原与载体蛋白BSA、OVA进行偶联,制备二氢脱氧胸腺嘧啶的人工抗原和包被原,通过紫外扫描、SDS-PAGE凝胶电泳方法对其进行鉴定,偶联比分别为9.8 : 1和12 : 1。人工抗原偶联成功后免疫BALB/c小鼠制备多抗血清,间接非竞争ELISA方法检测效价达1 : 2.56×10⁴,表明人工抗原合成成功。

关键词: 二氢脱氧胸腺嘧啶 半抗原 人工抗原 酶联免疫

SYNTHESIS AND IDENTIFICATION OF THE ARTIFICIAL ANTIGEN FOR DIHT IN IRRADIATION FOOD

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Abstract:

In the present study, 5,6-Dihydrothymidine Hapten (DiHT-COOH) was synthesized by using 5,6-Dihydrothymidine (DiHT) as raw material. DiHT-COOH was identified by thin layer chromatography and ¹H-NMR. Hapten was conjugated to bovine serum albumin (BSA) and ovalbumin (OVA) to obtain artificial immune antigen and coating antigen, respectively. After detected by UV spectroscopy and SDS-PAGE, the ratios of Hapten to protein were calculated. The conjugation ratios of immunogen and coating antigen were 9.8 : 1 and 12 : 1, respectively. Antisera were obtained by immunizing BALB/c with immunogen and the titer were 1 : 2.56×10⁴, which indicated the synthesis of artificial antigen was successful.

Keywords: DiHT Hapten artificial antigen ELISA

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