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论文

碱催化降解法制备抗癌活性化合物20(S)-原人参二醇

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摘要:

通过碱催化降解制备了与植物体内结构一致且具有抗癌活性的人参皂苷元--20(S)-原人参二醇,并对其进行分离及结构表征. 将西洋参茎叶总皂苷和强碱溶于高沸点有机溶剂中,在常压和高温条件下进行降解. 通过正交试验确定了制备20(S)-原人参二醇的最佳降解条件,并将降解物经萃取、 柱层析及重结晶等方法分离得到20(S)-原人参二醇. 按西洋参茎叶总皂苷计,20(S)-原人参二醇产率为5.01%,纯度为98.56% . 通过理化性质和光谱分析可确认该化合物为20(S)-原人参二醇. 所制备的20(S)-原人参二醇具有产率和纯度高及成本低等特点.

关键词: 20(S)-原人参二醇; 制备; 碱; 催化; 降解; 抗癌

Preparation of Antitumor Compound 20(S)- Protopanaxidiol by the Method of Alkali Catalyzing Degradation

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Abstract:

To prepare 20(S)-protopanaxidiolone natural sapogenin in Panax Ginseng C.A.,the method of alkali catalyzing degradation was used. 20(S)-Protopanaxidiol was separated and it's structure was characterized. The total saponins from leaves and stems of Panax qinquefolium L. and strong alkali were solved in an organic solvent with a high boiling point,then the degradation was performed at high temperature and common pressure. The optimal condition of degradation was confirmed through orthogonal experiment. 20(S)-Protopanaxidiol was separated and purified by extraction,column chromatography and recrystal from the degradation products. The obtained yield of 20(S)-protopanaxidiol was 5.01% accounting for the total saponins and the purity of 20(S)-protopanaxidiol was 98.56%. The structure of the compound was elucidated by characteristics and spectral analysis as 20(S)-protopanaxidiol. The characteristics of the method were proved to be high yield,high purity and low costing in 20(S)-protopanaxidiol preparation.

Keywords: 20(S)-Protopanaxidiol; Preparation; Alkali; Catalysis; Degradation; Antitumor

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