

研究简报

## 肿瘤增殖显像剂<sup>18</sup>F-FLT的合成和标记

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**摘要** 为制备肿瘤增殖显像剂3'-脱氧-3'-氟胸腺嘧啶脱氧核苷(3'-deoxy-3'-fluorothymidine, <sup>18</sup>F-FLT), 合成了标记前体3-N-t-叔丁氧羰基-1-[5'-O-(4, 4'-二甲氧基三苯甲基)-2'-脱氧-3'-O-(4-硝基苯磺酰基-β-1)-苏戊呋喃糖]胸腺嘧啶脱氧核苷(N-BOC-FLT)并进行了标记。标记前体和各步合成中间体均经红外、核磁共振和质谱确证; 于120 °C进行亲核氟化反应, 标记率为(35.2±5.8)% (经校正, n=2), 用TLC和HPLC检测其放化纯度(RCP)大于95%, 可满足临床研究的要求。

**关键词** [<sup>18</sup>F-标记](#); [<sup>18</sup>F-FLT](#); [合成](#)

**分类号** [O628](#); [R817](#)

## Synthesis and Fluoro-Radiolabelling of Proliferation Imaging Agent <sup>18</sup>F-FLT

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**Abstract** Synthesis and fluoro-radiolabeling of proliferation imaging agent 3'-deoxy-3'-[<sup>18</sup>F]-fluorothymidine (<sup>18</sup>F-FLT) were reported. The chemical structure of the labeling precursor N-BOC-FLT and all its intermediates were verified by IR, MS and <sup>1</sup>H NMR. Nucleophilic fluorination was proceeded at 120 °C. Radiochemical yield is (35.2±5.8)% (n=2, decay corrected) and final radiochemical purity is above 95% determined by TLC and HPLC. Thereby it can be used preclinically.

**Key words** [<sup>18</sup>F-labeling](#) \_ [<sup>18</sup>F-FLT](#) \_ [synthesis](#)

DOI

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