

化学

$[^{188}\text{Re}(\text{CO})_3(\text{H}_2\text{O})_3]^+$ 标记用双功能联接剂的制备、标记及性质

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摘要 合成了几个具有代表性的适于 $[^{188}\text{Re}(\text{CO})_3(\text{H}_2\text{O})_3]^+$ 标记用的双功能联接剂分子, 并对其羰基铼的标记条件进行了优化。结果表明: 在最优条件下, 上述标记物的放化纯均大于95%。放置实验和体外竞争实验表明: 标记物皆有很好的稳定性, 在48 h内, 放化纯无明显改变。该类分子有望用于生物活性分子羰基铼标记工作中。

关键词 [羰基铼](#) [双功能联接剂](#) [标记](#) [稳定性](#)

分类号 [R817.8](#)

Preparation of Several Bifunctional Chelating Agents for Precursor $[^{188}\text{Re}(\text{CO})_3(\text{H}_2\text{O})_3]^+$ and Their Radiolabelation and Characteration

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Abstract Several representative bifunctional chelating agents (BFCA) molecules which can coordinate with $[\text{Re}(\text{CO})_3(\text{H}_2\text{O})_3]^+$ were synthesized. On the NCA level, the ligands allow labelling yields >95% with $[^{188}\text{Re}(\text{CO})_3(\text{H}_2\text{O})_3]^+$ under mild reaction conditions. Incubation of the corresponding ^{188}Re complexes in PBS buffer and human serum at 37°C reveals good stabilities. Decomposition product is main $^{188}\text{ReO}_4^-$. The routine kit-preparation of the precursor $[^{188}\text{Re}(\text{CO})_3(\text{H}_2\text{O})_3]^+$ in combination with tailor-made ligand systems enables the organometallic labelling of biomolecules with unprecedented high specific activities.

Key words [rhenium](#) [tricarbonyl](#) [bifunctional](#) [chelating](#) [agent](#) [radiolabel](#) [stability](#)

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