عنوان مقاله:

Preliminary imaging studies of [61Cu]diacetyl-bis (N4-methylthiosemi-carbazone) in normal and hypoxic tumor models

محل انتشار:

مجله پزشکی هسته ای ایران, دوره 18, شماره 1 (سال: 1389)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

Introduction: [61Cu]diacetyl-bis(N4-methylthiosemicarbazone) ([61Cu]ATSM) is a well-established hypoxia imaging tracer with simple production and significant specifity. In this work the accumulation of the tracer is studied in wild-type, necrotic and hypoxic fibrosarcoma tumors. Methods: [61Cu]ATSM was prepared using ATSM ligand and [61Cu]CuOAc followed by i.v. administration and imaging studies in wild-type rats and hypoxic fibrosarcoma-bearing mice. Results: [61Cu]ATSM with high radiochemical purity (> 99%, HPLC, RTLC) was injected to wild-type rats as well as hypoxic and necrotic fibrosarcoma-bearing mice followed by imaging up to 3 hours. Conclusion: [61Cu]ATSM was mainly accumulated in liver, as well as kidney and bladder and less but still significant in brain of wild-type rats. A significant and hypoxia-specific tumor/non tumor ratio in hypoxic models was observed by co-incidence imaging 2 h post injection, while in necrotic and 12-week tumor-induced mice very slight tumor uptakes were detected. [61Cu]ATSM is a positron emission tomography (PET) radiotracer for selective tumor hypoxia imaging from necrotic and proliferative tumors.

کلمات کلیدی:

61Cu]ATSM, Copper radiopharmaceuticals, Hypoxia, Co-incidence imaging, Fibrosarcoma]