

Enhancement of the relative uptake of ^{18}F -FDG in mouse fibrosarcoma by rolipram

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The effect of rolipram, a selective phosphodiesterase type 4 inhibitor, on the uptake of ^{18}F -fluorodeoxyglucose (^{18}F -FDG) in tumor tissue was examined in mice transplanted with NFSa fibrosarcoma. The uptake indexes of ^{18}F -FDG in the heart, skeletal muscle and brain remarkably decreased after treatment with 3 mg/kg of rolipram (heart: 13%, skeletal muscle: 14%, brain: 31%), but fibrosarcoma tissue showed only a 50% reduction in the uptake index of ^{18}F -FDG. The tumor/muscle ratio of radioactivity 30 min after ^{18}F -FDG injection was consequently enhanced from 1.9 to 6.5 by rolipram. This indicates the possible use of rolipram to enhance the sensitivity of tumor detection, as well as characterization of tumors in ^{18}F -FDG PET.

Key words: rolipram, fibrosarcoma, ^{18}F -fluorodeoxyglucose