Imaging with Positron-Emitting Taxanes, Camptothecins, and Other Drugs as a Guide to Antitumor Therapy

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Technology description

Summary

This invention also relates to the use, synthesis and structure of three radio-labeled probe molecules, 11C-SN-38, 11C-imatinib, and 11C-mitoxantrone. SN-38 is a major active metabolite of Camptosar, a product marketed by Pharmacia for the treatment of colorectal cancer. Imatinib is a compound that is used to treat chronic myeloid leukemia (CML) and is marketed under the tradename Gleevec. Mitoxantrone is also used to treat certain types of cancers and multiple sclerosis. For all of these compounds the FDA approved new and expanded uses and there is intense interest in determining whether and where each of the compounds actually collects in the body, and especially whether they are taken up by the targeted tumor. Traditional approaches to determine drug uptake and retention have been invasive.

Advantages

1) avoidance of exposing patients to toxic drugs that have no potential for benefit; 2) ability to rapidly determine whether a given tumor will be likely to respond to a particular drug; and 3) the ability to monitor the impact of various dosages, schedules, and modulators for delivery, in situ, at the actual tumor under treatment conditions. Further, methods to guide treatment of solid tumors, with labeled taxanes, are also disclosed in the present application.

Institution

NIH - National Institutes of Health

联系我们

叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com