

Improved synthesis of [^{11}C]SA4503, [^{11}C]MPDX and [^{11}C]TMSX by use of [^{11}C]methyl triflate

Kazunori KAWAMURA*** and Kiichi ISHIWATA*

*Positron Medical Center, Tokyo Metropolitan Institute of Gerontology

**SHI Accelerator Service, Ltd.

Recently we have clinically used three new radioligands, [^{11}C]SA4503, [^{11}C]MPDX, and [^{11}C]TMSX, for mapping sigma₁, adenosine A₁, and adenosine A_{2A} receptors, respectively, in the human brain by positron emission tomography. These radioligands are synthesized by methylation of the respective demethyl precursor with [^{11}C]methyl iodide. Here we demonstrate the improved syntheses of these compounds by use of [^{11}C]methyl triflate, a highly reactive alternative to [^{11}C]methyl iodide.

Key words: carbon-11, methyl triflate, SA4503, MPDX, TMSX