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Automated radiosynthesis of the Pittsburg compound-B using a commercial synthesizer

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Background **The Pittsburgh compound-B ([^{11}C]PIB) is a highly interesting radiotracer for imaging amyloid plaques in Alzheimer's disease by positron emission tomography (PET). An increasing number of PET centres schedule its transfer for clinical studies and therefore are interested in its automated synthesis.**

Method **With the aim of flexibility, we reported the first fully automated synthesis of [^{11}C]PIB with the coupling of two commercial synthesizers.**

Results **[^{11}C]PIB was prepared from 2-(4′-aminophenyl)-6-hydroxybenzothiazole by [^{11}C]methyl triflate methylation reacting in an high-performance liquid chromatography loop and resulting in a total radiochemical yield of 13 ± 15% after a synthesis time of 25 min. The specific activity of [^{11}C]PIB was 20–60 GBq/μmol and its radiochemical purity is more than 99%.**

Conclusion **The rapid synthesis and the automatic auto-cleaning procedure allow convenient and reproducible [^{11}C]PIB synthesis to be performed during the same day for preclinical or clinical PET scans. *Nucl Med Commun* 29:920–926 © 2008 Wolters Kluwer Health | Lippincott Williams & Wilkins.**

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