Synthesis and Radiofluorination of Iodophenyl Esters as Tool for the Traceless Staudinger Ligation

Marc Pretze\textsuperscript{a}, Anke Flemming\textsuperscript{b}, Martin Köckerling\textsuperscript{b}, and Constantin Mamat\textsuperscript{a}

\textsuperscript{a} Institut für Radiopharmazie am Forschungszentrum Dresden-Rossendorf e.V., Postfach 51, 01 19, 01314 Dresden, Germany
\textsuperscript{b} Institut für Chemie der Universität Rostock, Albert-Einstein-Straße 3a, 18059 Rostock, Germany

Reprint requests to Dr. Constantin Mamat. Fax: +49 (0) 351-260 3232. E-mail: c.mamat@fzd.de

\textit{Z. Naturforsch.} 2010, 65\textit{b}, 1128 – 1136; received April 14, 2010

A new synthetic pathway for the preparation of \(\omega\)-functionalized 2-iodophenyl esters as starting materials for the synthesis of substituted phosphanes is described. A radiolabeling of these esters with fluorine-18 has led to building blocks which were reacted with HPPh\(_2\) in a Pd-catalyzed P-C cross coupling to establish new phosphanes. These compounds can be applied as mild and bioorthogonal radiolabeling agents by means of the traceless Staudinger ligation. A route to access this class of compounds has been established.

\textit{Key words:} Staudinger Ligation, Traceless, Bioorthogonal, Radiofluorination, PET, X-Ray Structure