



Contribution ID: 148

Type: poster preferred

Reactivity of Resorufin-based Fluorogenic Boronate Probe PC1 Towards ROS/RNS and Its Use in The Studies of Peroxynitrite Reactivity

Wednesday, 17 October 2012 16:24 (1 minute)

It is known that aryl boronates can react with hydrogen peroxide, and hypochlorite with the formation of corresponding phenols. Previously, we have shown that arylboronic acids react rapidly, directly and stoichiometrically with peroxynitrite with the formation of corresponding phenols, as major products (85-90%). High reactivity toward peroxynitrite makes them promising probes for the detection of peroxynitrite in vitro and in vivo, and a useful tool for the studies of peroxynitrite reactivity.

Here we present the results of the study on the reactivity of boronate fluorogenic probe PC1 toward selected ROS/RNS (e.g. peroxynitrite and peroxynitrate).

The boronate probe PC1 was also used in the kinetic studies on the reactivity of peroxynitrite towards selected salen-manganese complexes EUK. Here we show that there is a strong correlation between reported catalase activity of salen-manganese complexes EUK and the second-order rate constants of their reaction with peroxynitrite.

For better understanding of the factors affecting the oxidation of boronates we also carried out some experiments with model para-substituted aryl boronic acids.

Primary author: Dr SIKORA, Adam (Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland)

Co-authors: MARCINEK, Andrzej (Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland); DEBSKI, Dawid (Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland); ADAMUS, Jan (Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland); GUMINSKA, Karolina (Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland); PIOTROWSKI, Lukasz (Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland); KWIATKOWSKI, Piotr (Department of Chemistry, Warsaw University, Warsaw, Poland)

Presenter: Dr SIKORA, Adam (Institute of Applied Radiation Chemistry, Lodz University of Technology, Lodz, Poland)

Session Classification: Poster Session 2

Track Classification: Oxidative Stress