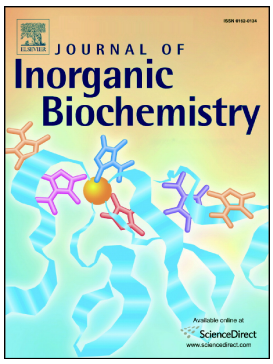

EPR and photophysical characterization of six bioactive oxidovanadium(IV) complexes in the conditions of in vitro cell tests

Marta Lovisari, Giorgio Volpi, Domenica Marabello, Silvano Cadamuro, Annamaria Deagostino, Eliano Diana, Alessandro Barge, Margherita Gallicchio, Valentina Boscaro, Elena Ghibaudi

PII: S0162-0134(16)30313-0
DOI: doi: 10.1016/j.jinorgbio.2017.02.009
Reference: JIB 10162

To appear in: *Journal of Inorganic Biochemistry*

Received date: 4 October 2016
Revised date: 23 January 2017
Accepted date: 10 February 2017

Please cite this article as: Marta Lovisari, Giorgio Volpi, Domenica Marabello, Silvano Cadamuro, Annamaria Deagostino, Eliano Diana, Alessandro Barge, Margherita Gallicchio, Valentina Boscaro, Elena Ghibaudi , EPR and photophysical characterization of six bioactive oxidovanadium(IV) complexes in the conditions of in vitro cell tests. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. Jib(2017), doi: 10.1016/j.jinorgbio.2017.02.009

EPR AND PHOTOPHYSICAL CHARACTERIZATION OF SIX BIOACTIVE OXIDOVANADIUM(IV) COMPLEXES IN THE CONDITIONS OF *IN VITRO* CELL TESTS

Marta Lovisari[1], Giorgio Volpi[1], Domenica Marabello[1], Silvano Cadamuro[1], Annamaria Deagostino[1], Eliano Diana[1], Alessandro Barge[2], Margherita Gallicchio[2], Valentina Boscaro[2], Elena Ghibaudi[1*]

1- Dip.to di Chimica, University of Torino - Via Giuria 7, I-10125 Torino (Italy)

2- Dip.to di Scienza e Tecnologia del farmaco, University of Torino - Via Giuria 9, I-10125 Torino (Italy)

[*] Elena Ghibaudi

Dip.to di Chimica, University of Torino - Via Giuria 7, I-10125 Torino (Italy)

E-mail: elena.ghibaudi@unito.it; Tel. ++39-(0)11-6707951; Fax. ++39-(0)11-6707855

Abstract

A number of oxidovanadium(IV) complexes have been reported to display anticancer activity. A theranostic approach, based on the simultaneous observation of both the effect of oxidovanadium(IV) complexes on cell viability and the disclosure of their intracellular fate, is possible by using oxidovanadium(IV) complexes functionalized with fluorescent ligands. In the present study we accomplished the characterisation of six oxidovanadium(IV) complexes in conditions close to those employed for *in vitro* administration. In particular, we investigated the light harvesting properties of such complexes in the presence of a dimethylsulphoxide/aqueous buffer mixture, and we found that one complex exhibits a quantum yield suitable for confocal microscopy investigations. EPR investigations in the same conditions provide information about the presence of ligands' substitution processes. Finally, the electrochemical properties of all