

Il contributo dei giovani chimici in Campania

Società Chimica Italiana
Sezione Campania

19 Luglio 2024

Università degli Studi della Campania Luigi Vanvitelli

Dip. di Scienze e Tecnologie Ambientali Biologiche e Farmaceutiche (DISTABiF) - Aula A2

PROGRAMMA

9:00 - Registrazione

10:00 - Saluti istituzionali

Antonio Fiorentino (Direttore DISTABiF)

Concetta Giancola (Presidente SCI Campania)

Gianluca Maria Farinola (Presidente SCI)

Rossella Fasulo (Presidente Ordine Chimici e Fisici Campania)

10:30 - Roberto Fattorusso (UniCampania)

"Beyond the structure: 20 years of Bio-NMR in Caserta"

11:10 - Sessione I

13:00 - Pranzo

14:00 - Sessione II

15:30 - Coffee Break

16:00 - Sessione III

17:00 - Chiusura dei lavori

DATE IMPORTANTI

ISCRIZIONE GRATUITA - 20 MAGGIO

INVIO ABSTRACT - 31 MAGGIO

NOTIFICA ACCETTAZIONE - 30 GIUGNO

Una iniziativa di



con il supporto di



Comitato organizzatore

Clementina Acconcia

Stefano Cinti

Raffaele Cucciniello

Gianluca D'Abrosca

Maria della Valle

Martina Dragone

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Il Contributo dei Giovani Chimici in Campania

Edizione 2024

Mimics of glutathione peroxidase: selenoglycoconjugates

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This work is part of a project focused on the synthesis of mimics of glutathione peroxidase (GPx), an enzymatic antioxidant characterized by the presence of selenocysteines in the active site. In the last 20 years the exploitation of antioxidant activity of selenobased-compounds has improved, just due to the use of Ebselen, a selenocompound, as GPx mimic.¹ However, their clinical use seems to be compromised by the low solubility in water.² For this reason is difficult to achieve optimal therapeutic doses in the blood. In order to deal with this problem is possible to take advantage of the pharmacological properties of selenium with the chemical-physical properties of sugar. To this aim in the last decade the research is focused on the use of selenosugars. In this frame, in attempt to optimize the antioxidant properties of selenosugars, the glycoconjugation with a polyphenolic unit, which is a molecule capable of inhibiting or disabling the action of free radicals, could be considered. Polyphenols are, indeed, a class of compounds with antioxidant and antiviral properties which are related to the number of the phenolic ring, the position of the hydroxyl groups and the number of unsaturation of the molecule. The purpose of this work is the synthesis of selenoglycoconjugates able to exploit in a synergic way the antioxidant propriety of selenium with those of chelators and antioxidant of polyphenols, to prevent an oxidative stress state.

Based on previous results obtained on D-ribose,³ we, in turn, employed as starting sugar the D-mannose to synthesize the selenosugar and it was then conjugated, thanks to the reactivity of primary hydroxyl, to a polyphenolic unit.

Keywords: *selenosugar, polyphenol, selenoglycoconjugate*

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References

- [1] H. Sies, M.J. Parnharm, *Free Radic Biol Med.* 156 (2020), 107112.
- [2] F. Mangiavacchi, I. F. Coelho Dias, I. Di Lorenzo, P. Grzes, M. Palomba, O. Rosati, L. Bagnoli, F. Marini, C. Santi, E. J. Lenardao, L. Sancineto, *Pharmaceuticals.* 13, 9 (2020) 211.
- [3] L. Serpico, M. De Nisco, F. Cermola, M. Manfra, S. Pedatella, *Molecules.* 26 (2021), 2541.