CURRICULUM VITAE – ALESSANDRO DESIDERI

ADDRESS

Department of Biology
University of Rome Tor Vergata
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PERSONAL DETAILS

Surname : Desideri First name: Alessandro
Date of Birth: May 22 1951 Nationality: Italian
Gender : Male status : Married

DEGREES AWARDED

University of Roma La Sapienza (IT)	1975	Degree in Physics
Leicester University (U.K.)	1982	PhD Chemistry

POSITIONS HELD

1975-1976 LeverHulme Fellow Dept of Chemistry Leicester University (UK)
1977-1979 Assistant in Pysics Faculty of Science University of Calabria (IT)
1979-1985 Assistant Professor of Spectroscopy Faculty of Science University of Calabria (IT)
1985-1990 Associate Professor of Biochemistry Faculty of Science University of Rome Tor Vergata (IT)
1990-1995 Full Professor of Biochemistry Faculty of Science University of Messina (IT)
1995- present Full Professor of Molecular Biology Faculty of Science University of Rome Tor Vergata (IT)

PRESENT POSITION

Full Professor of Molecular Biology Faculty of Science University of Rome Tor Vergata (IT)

TEACHING

Structural Biology- Proteins Structure-function relationship- Bioinformatics Drug-receptors interaction for specialistic and Ph. D. students

Positition in foreign countries

-1976-1977 Research fellow Chemistry Department Leicester University (UK)
- 1982 Visiting Researcher Università Pierre e Marie Curie Paris (France)
- 1983 Short Term Embo fellowship Center of Biomolecular Research Utrecht (Netherland)
- 1984 Visiting researcher IBM Thomas J. Watson Research Center, Yorktown Heights, NY New York (USA)
- 2008 Visiting Professor Indian Insitute of Chemical Biology CSIR Calcutta (India)
- 2010 Visiting Professor Department of Molecular Biology University of Aarhus (Denmark)
- 2011 Visiting Professor Department of Biomedical Science University of Leon (Spain)

RESEARCH INTERESTS

- Structure-dynamics- function relationship in topoisomerase I
- Interaction of topoisomerase I with anticancer drugs
- Molecular dynamics simulation of proteins in different environments
- Principles of molecular recognition in proteins through mutagenesis spectroscopic and simulative methods
-Investigation of membrane proteins by site directed spin labeling

ORGANISATIONAL SKILLS

He has relevant organisational skills. At the University of Tor Vergata he has given an important contribution to the development of the structural biology sector. In detail he has built an interdisciplinary group with experience in the investigation of the protein structure-function relationship using several approaches such as site directed mutagenesis, biochemical assays, molecular modelling and simulation, magnetic resonance spectroscopy .
At the moment he is coordinating an interdisciplinary group of about 15 people.

GRANTS

Since 1982 he has obtained funds from several agencies such as National Research Center (CNR), European Community (EC), National Institute of Physics of Matter (INFM), the Ministry of Italian Research (MIUR), the Ministery of Health and the Italian Research Association for Cancer (AIRC) .

Reviewer

He is Peer Reviewer of international Journals such as J.Mol. Biol. , Proteins, Biochemistry, J. Am. Chem Soc., Chem review , J. Phys. Chem., ACS nano, NAR

He belongs to the Editorial Board of Mol. Biol. Intern., The Open Bioinf. J., The Open Struct. Biol. J.

He is Peer Reviewer of the Israel Institute of Science , of the Human Science Frontier Program , of the European Community and of the Italian Ministery of Research to confer research grants.

He has been the Italian representative for the National Institute of Physics Matter(INFM) at the EMRC of the European Science Foundation

He is member of the American Biophysical Society, of the Italian Biochemical Society and of the Italian Society of Bioinformatics

SCIENTIFIC PROFILE

The research activity of Alessandro Desideri has been mainly concentrated on the investigation of the structure-dynamics-function relationship in proteins using both advanced experimental approaches and molecular modeling and dynamics calculation. He has been one of the first in Italy to systematically use molecular dynamics simulation of proteins to predict functional properties that then have been experimentally verified. He has extensively applied the computational approach coupled to experimental assays to investigate the structural-dynamical properties of Cu,Zn superoxide dismutase contributing in elucidating the principles of the molecular recognition between this enzyme and the substrate. In particular he has shown that the electric field produced by the charges of the protein has a dominant role for the substrate interaction and this finding permitted him to engineer mutants having an enhanced catalytic efficiency.

More recently he has used extensively the molecular dynamics simulation approach coupled to enzymatic assays to investigate the principles of interaction of the human topoisomerase I enzyme with DNA and to propose original explanation for the drug resistance displayed by single mutants of this enzyme. To this aim he has been the first one in the international panorama to produce a reliable simulation of the topoisomerase-DNA complex that has

provided important informations for the understanding of the principles governing the interaction with antitumoral drugs. In Tor Vergata he has set up an interdisciplinary group working in molecular modelling and simulation and in the application of experimental biochemical approaches for the understanding of the enzyme function and for the elucidation of the mechanism of recognition with specific molecular targets or with specific drugs.

SELECTED PUBLICATIONS 1999-2011

He is author of more than 250 papers published in international peer reviewed journals. h-index of Alessandro Desideri = 32 as evaluated from ISI Web of Science

Development of Derivatives of 3, 3'-Diindolylmethane as Potent Leishmania donovani Bi-Subunit Topoisomerase IB Poisons.
Roy A, Chowdhury S, Sengupta S, Mandal M, Jaisankar P, D'Annessa I, **Desideri A**, Majumder HK.
PLoS One. 2011;6(12):e28493. Epub 2011 Dec 12.

Peptide Inhibition of Topoisomerase IB from Plasmodium falciparum.
Roy A, D'Annessa I, Nielsen CJ, Tordrup D, Laursen RR, Knudsen BR, **Desideri A**, Andersen FF.
Mol Biol Int. 2011;2011:854626. Epub 2011 May 4.

Inhibition of human DNA topoisomerase IB by a Cyclometalated Gold III compound: Analysis on the different steps of the enzyme catalytic cycle.
Castelli S, Vassallo O, Katkar P, Che CM, Sun RW, **Desideri A**.
Arch Biochem Biophys. 2011 Oct 19. [Epub ahead of print]

The sterile alpha-motif (SAM) domain of p63 binds in vitro monoasialoganglioside (GM1) micelles.
Rufini S, Lena AM, Cadot B, Mele S, Amelio I, Terrinoni A, **Desideri A**, Melino G, Candi E.
Biochem Pharmacol. 2011 Nov 15;82(10):1262-8. Epub 2011 Jul 27.

Targeting Tumor Cells through Chitosan-Folate Modified Microcapsules Loaded with Camptothecin.
Galbiati A, Tabolacci C, Morozzo Della Rocca B, Mattioli P, Beninati S, Paradossi G, **Desideri A.**
Bioconjug Chem. 2011 May 18. [Epub ahead of print]

Field of study:

Structural Biology:
- Structure-dynamics- function relationship in topoisomerase I
- Interaction of topoisomerase I with anticancer drugs
- Molecular dynamics simulation of proteins in different environments
- Principles of molecular recognition in proteins through mutagenesis spectroscopic and simulative methods

Location:

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