CURRICULUM VITAE

PERSONAL INFORMATION

Name, Surname	Katia D'Ambrosio

WORK EXPERIENCE

Dates	From February 2009 to now
Name and address of employer	Istituto di Biostrutture e Bioimmagini – UOS Napoli Centro - CNR Via Mezzocannone 16, 80134 Napoli - Italy
Type of business or sector	Structural Biology
Occupation or position held	Permanent Staff Researcher
Main activities and responsibilities	Protein crystallization and protein structure resolution by X-ray diffraction.

Dates	November 2003 – January 2009
Name and address of employer	Istituto di Biostrutture e Bioimmagini – UOS Napoli Centro - CNR
Occupation or position held	Fix-term Researcher
Main activities and responsibilities	Protein crystallization and protein structure resolution by X-ray diffraction.

Dates	September 2001- February 2003
Name and address of employer	'LCM3B', University "Henry Poincairè", Nancy (France)
Occupation or position held	Structural biology
Main activities and responsibilities	Guest Investigator

Dates	February 1999-June 1999
Name and address of employer	Pharmaceutical Chemistry Department, University of Montpellier (France)
Occupation or position held	Chemistry
Main activities and responsibilities	Guest Investigator

EDUCATION AND TRAINING

Dates	13 - 22 May 2005
Name and type of organization providing education and training	37th International School on the Crystallography, Erice, Italy
Type of business or sector	"Evolving Methods for Macromolecular Crystallography"

Dates	2001 - 2004
Name and type of organization providing education and training	International Ph.D. in Chemistry of Biological Processes University of Naples "Federico II", Naples
Principal subjects occupational skills covered	"Structural study of proteins involved in oxidoreduction mechanisms. Characterization of complexes and reaction intermediates"

Dates	May 2003
Name and type of organization providing education and training	7th International School on the Crystallography of Biological Macromolecules, Como, Italy

Dates	December 2000
Name and type of organisation providing education and training	Degree in Chemistry and Pharmaceutical technology at Chemistry of the natural substances Department, University of Naples "Federico II".

Principal subjects occupational skills covered	"Synthesis of 2'-Deoxynucleosides 5-metilamine substituted through reductive amination"
Dates	January 1998 - July 1998
Name and type of organisation providing education and training	EU Erasmus fellowship at the University of Pharmacy of Montpellier, France.

RESEARCH ACTIVITIES

Research sectors	Structural biology, Biocrystallography, Drug design
Participation in financed scientific projects	• Nuovi agenti antitumorali dotati di meccanismo di azione multi-targeting". Funding institution: PRIN: Progeti di Ricerca di Rilevante Interesse Nazionale – Bando 2017. August 2019-February 2023. Euro 91200.00. • IMPARA - Imaging Dalle Molecole Alla Preclinica". Funding institution: PON Ricerca e Innovazione 2014-2020 - Azione II.1. June 2019- February 2022. Euro 2451000.00. • Sviluppo di un sistema integrato radiomico e fenotipico, per la diagnosi, la prognosi e la personalizzazione della terapia dei tumori della testa e del collo (eMORFORAD)". Funding institution: Regione Campania (Programma Operativo Regionale Campania FESR 2014-2020 e con l'Asse 1 OO.SS. 1.2.2/1.1.2). February 2018-Dicember 2020. Euro 342750.00. • Campania Imaging Infrastructure for Research in Oncology (CIRO)". Funding institution: Regione Campania (POR FESR 2014-2020). January 2018-February 2022. Euro 444260.93. • Research grant InterOmics of the Italian National Research Council for a project entitled "Study of the Extracellular Interactome of human Carbonic Anhydrase IX (SEICA)". Project duration: 06/17-12/18. € 100000. Role: Participant. • Research grant InterOmics of the Italian National Research Council for a project entitled "Interactomic study of the tumor associated protein Carbonic Anhydrase IX". Project duration: 04/15-12/15. € 100.000. Role: Participant. • Research grant Accordi Bilaterali of the Italian National Research Council for a project entitled "Glycomimetics as CAIX inhibitors: design, synthesis, inhibitory activity and structural characterization". Project duration: 01/2012-12/2013. € 8.000. Role: Participant. • Research grant of European Union (Sixth Framework Programme) for the project entitled "Design of zinc metalloenzymes targeted drugs using an integrated technology approach (Deznit)". Project duration: 01/03/2009 – 30/06/2010. € 140.501. Role: Participant. • Research grant FEP Campania Asse 3 – Misura 3.5 Progetti Pilota ex art. 41 – Progetti Retrospettivi (annualità 2007-2013) for a project entitled 2."Sviluppo di tecniche diagnostiche per la rivelazione della Brucellosi dei pesci". € 176.457. Role: Scientific Responsible. • Research grant of the Solvay Pharmaceuticals GMBH (Hannover, Germany) for a project entitled "CA-inhibitors: co-crystallizzation of Carbonic Anhydrase with SOLVAY compounds". Project duration: 07/11/2007 – 31/12/2008. € 16.000. Role: Participant. • Research grant Ricerca Spontanea a Tema Libero 2007 of the Italian National Research Council for a project entitled "Progettazione e sintesi di molecole da utilizzarsi nello sviluppo di nuove terapie antiobesità". Project duration: one years. € 30.000. Role: Participant. • Research grant of the Solvay Pharmaceuticals GMBH (Hannover, Germany) for a project entitled "CA-inhibitors: co-crystallizzation of Carbonic Anhydrase with SOLVAY compounds". Project duration: 01/06/2006 – 31/05/2007. € 15.000. Role: Participant.
Participation in the activity of editorial board of international scientific journals	2018: Guest Editor of the special issue entitled "Recent Advances in the Development of New Therapeutic Tools Against Major Parasitic Diseases" published on "Current Medicinal Chemistry". 2016: Guest Editor of the special issue entitled "Bacterial metallo-enzymes as drug targets" published on "Current topics in medicinal chemistry".

Books and Articles

X-RAY STUDY OF THE GLUTAREDOXIN FROM POPLAR IN COMPLEX WITH GLUTATHIONE. **K. D'Ambrosio**, C. Corbier, N. Rouhier, J-P. Jacquot, E. Benedetti & A. Aubry (2002). Peptides, 718-719, Edizioni Ziino, Napoli, Italia.

CRYSTALLIZATION AND PRELIMINARY X-RAY STUDIES OF THE GLUTAREDOXIN FROM POPLAR IN COMPLEX WITH GLUTATHIONE. **K. D'Ambrosio**, B. Kauffmann , N. Rouhier, E. Benedetti, J-P. Jacquot, A. Aubry & C. Corbier (2003). Acta Cryst., D59, 1043-1045.

CRYSTALLIZATION AND PRELIMINARY X-RAY DIFFRACTION STUDIES OF A PROTEIN DISULFIDE OXIDOREDUCTASE FROM AQUIFEX AEOLICUS. **K. D'Ambrosio**, G. De Simone, E. Pedone, M. Rossi, S. Bartolucci & C. Pedone (2004). Acta Cryst., D60, 2076-2077.

CRYSTALLIZATION AND PRELIMINARY X-RAY DIFFRACTION STUDIES OF A PROTEIN DISULFIDE OXIDOREDUCTASE FROM AEROPYRUM PERNIX K1. **K. D'Ambrosio**, G. De Simone, E. Pedone, M. Rossi, S. Bartolucci & C. Pedone (2005). Acta Cryst., F61, 335-336.

THE FIRST CRYSTAL STRUCTURE OF A THIOACYLENZYME INTERMEDIATE IN THE ALDH FAMILY: NEW COENZYME CONFORMATION AND RELEVANCE TO CATALYSIS. **K. D'Ambrosio**, A. Pailot, F. Talfournier, C. Didierjean, E. Benedetti, A. Aubry, G. Branlant & C. Corbier (2006). Biochemistry, 45, 2978-2986.

INSIGHTS ON A NEW PDI-LIKE FAMILY: STRUCTURAL AND FUNCTIONAL ANALYSIS OF A PROTEIN DISULFIDE OXIDOREDUCTASE FROM THE BACTERIUM AQUIFEX AEOLICUS. E. Pedone, **K. D'Ambrosio**, G. De Simone, M. Rossi, S. Bartolucci & C. Pedone (2006). J. Mol. Biol., 356, 155-164.

CARBONIC ANHYDRASE INHIBITORS: VALDECOXIB BINDS TO A DIFFERENT ACTIVE SITE REGION OF THE HUMAN ISOFORM II AS COMPARED TO THE STRUCTURALLY RELATED CYCLOOXYGENASE II "SELECTIVE" INHIBITOR CELECOXIB. A. Di Fiore, C. Pedone, **K. D'Ambrosio**, A. Scozzafava, G. De Simone & C.T. Supuran (2006). Bioorg. Med. Chem. Lett., 16, 437-442.

A NOVEL MEMBER OF THE PROTEIN DISULFIDE OXIDOREDUCTASE FAMILY FROM AEROPYRUM PERNIX K1: STRUCTURE, FUNCTION AND ELECTROSTATICS. **K. D'Ambrosio**, E. Pedone, E. Langella, G. De Simone, M. Rossi, C. Pedone & S. Bartolucci (2006). J. Mol. Biol., 362, 743-752.

INVARIANT T244 IS ESSENTIAL FOR EFFICIENT ACYLATION STEP OF THE NONPHOSPHORYLATING GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE FROM STREPTOCOCCUS MUTANS. A. Pailot, **K. D'Ambrosio**, C. Corbier, F. Talfournier & G. Branlant (2006). Biochemical Journal, 400, 521-530.

CARBONIC ANHYDRASE INHIBITORS: BINDING OF INDANESULFONAMIDES TO THE HUMAN ISOFORM II. **K. D'Ambrosio**, B. Masereel, A. Thiry, A. Scozzafava, Claudiu T. Supuran & G. De Simone (2008). Chem. Med. Chem., 3, 473 – 477.

CARBONIC ANHYDRASE INHIBITORS: BIOREDUCTIVE NITRO-CONTAINING SULFONAMIDES WITH SELECTIVITY FOR TARGETING THE TUMOR ASSOCIATED ISOFORMS IX AND XII. **K. D'Ambrosio**, R.M. Vitale, J-M. Dogné, B. Masereel, A. Innocenti & A. Scozzafava, G. De Simone & C. T. Supuran. (2008). J. Med. Chem., 51, 3230–3237.

INSIGHTS INTO THE CATALYTIC MECHANISM OF THE BCP FAMILY: FUNCTIONAL AND STRUCTURAL ANALYSIS OF BCP1 FROM SULFOLOBUS SOLFATARICUS. **K. D'Ambrosio**, D. Limauro, E. Pedone, I. Galdi, C. Pedone, S. Bartolucci & G. De Simone (2009). Proteins, 76, 995-1006.

X-RAY CRYSTALLOGRAPHY OF CARBONIC ANHYDRASE INHIBITORS AND ITS IMPORTANCE IN DRUG DESIGN. Alterio V., Di Fiore A., **D'Ambrosio K**., Supuran C.T. & De Simone G. in DRUG DESIGN OF ZINC-ENZYME INHIBITORS: FUNCTIONAL, STRUCTURAL, AND DISEASE APPLICATIONS Wiley, Hoboken, (2009). 73-138.

MULTIPLE CATALYTICALLY ACTIVE TRX FOLDS: A WINNING STRATEGY FOR MANY FUNCTIONS. Pedone E., Limauro D., **D'Ambrosio K.,** De Simone G. & Bartolucci S. (2010). Cell. Mol. Life Sci., 67, 3797-3814.

EXPLORING THE CATALYTIC MECHANISM OF THE FIRST DIMERIC BCP: FUNCTIONAL, STRUCTURAL AND DOCKING ANALYSES OF BCP4 FROM SULFOLOBUS SOLFATARICUS. Limauro D., **D'Ambrosio K**., Langella E., De Simone G., Galdi I., Pedone C., Pedone E. & Bartolucci S. (2010). Biochimie, 92, 1435-1444.

C68 FROM THE SULFOLOBUS ISLANDICUS PLASMID-VIRUS PSSVX IS A NOVEL MEMBER OF THE ABRB-LIKE TRANSCRIPTION FACTOR FAMILY. Contursi P., **D'Ambrosio K.**, Pirone L., Pedone E., Aucelli T., She Q., De Simone G. & Bartolucci S. (2011). Biochem. J. 435, 157-166.

MULTIPLE BINDING MODES OF INHIBITORS TO CARBONIC ANHYDRASES: HOW TO DESIGN SPECIFIC DRUGS TARGETING 15 DIFFERENT ISOFORMS? V. Alterio, A. Di Fiore, **K. D'Ambrosio**, C.T. Supuran & G. De Simone (2012). Chem Rev., 112, 4421-4468.

DEVELOPMENT OF POTENT CARBONIC ANHYDRASE INHIBITORS INCORPORATING BOTH SULFONAMIDE AND SULFAMIDE GROUPS. **K. D'Ambrosio**, F.Z. Smaine, F. Carta, G. De Simone, J.Y. Winum & C.T. Supuran (2012). J. Med. Chem. 55, 6776-6783.

STRUCTURAL BASIS FOR THE RATIONAL DESIGN OF NEW ANTI-BRUCELLA AGENTS: THE CRYSTAL STRUCTURE OF THE C366S MUTANT OF L-HISTIDINOL DEHYDROGENASE FROM BRUCELLA SUIS. **K. D'ambrosio**, M. Lopez, N.A. Dathan, S. Ouahrani-Bettache, S. Köhler, G. Ascione, S.M. Monti, J.Y. Winum & G. De Simone (2014). Biochimie, 97, 114-120.

SULFOLOBUS SOLFATARICUS THIOL REDOX PUZZLE: CHARACTERIZATION OF AN ATYPICAL PROTEIN DISULFIDE OXIDOREDUCTASE. D. Limauro, G. De Simone, L. Pirone, S. Bartolucci, **K. D'Ambrosio*** & E. Pedone*. (2014) Extremophiles, 18, 219-228.

K. D'Ambrosio, G. De Simone & C.T. Supuran (2014) Human Carbonic Anhydrases: Catalytic Properties, Structural Features, and Tissue Distribution. In "The Carbonic Anhydrases as Biocatalysts". Eds De Simone G. and Supuran CT. Elsevier, pp. 17 - 30.

OUT OF THE ACTIVE SITE BINDING POCKET FOR CARBONIC ANHYDRASE INHIBITORS. **K. D'Ambrosio**,* S. Carradori, S.M. Monti, M. Buonanno, D. Secci, D. Vullo, C.T. Supuran & G. De Simone.* (2015). Chem. Comm., 51, 302-305.

THERMOSTABLE CARBONIC ANHYDRASES IN BIOTECHNOLOGICAL APPLICATIONS. A. Di Fiore,* V. Alterio, S.M. Monti, G. De Simone, **K. D'Ambrosio*** (2015). Int. J. Mol. Sci. 16, 15456-15480.

A COMBINED CRYSTALLOGRAPHIC AND THEORETICAL STUDY EXPLAINS THE CAPABILITY OF CARBOXYLIC ACIDS TO ADOPT MULTIPLE BINDING MODES WITHIN CARBONIC ANHYDRASE ACTIVE SITE. E. Langella, **K. D'Ambrosio**,* M. D'Ascenzio, S. Carradori, S. Monti, C.T. Supuran, G. De Simone (2016). Chemistry. 22, 97-100.

L-HISTIDINOL DEHYDROGENASE AS A NEW TARGET FOR OLD DISEASES. S. M. Monti, G. De Simone, **K. D'Ambrosio*** (2016). Curr. Top. Med. Chem. 16, 2369-2378.

Editorial (Thematic Issue: Bacterial Metallo-Enzymes as Drug Targets). S.M. Monti, **K. D'Ambrosio**, G. De Simone (2016). Curr. Top. Med. Chem. 16, 2329.

ARE CARBONIC ANHYDRASES SUITABLE TARGETS TO FIGHT PROTOZOAN PARASITIC DISEASES? **K. D'Ambrosio***, C.T. Supuran, G. De Simone* (2018). Curr. Med. Chem. 25, 5266-5278.

RECENT ADVANCES IN THE DEVELOPMENT OF NEW THERAPEUTIC TOOLS AGAINST MAJOR PARASITIC DISEASES. De Simone G, **D'Ambrosio K.,** (2018) Curr. Med. Chem. 25(39), 5238.

INHIBITION OF CARBONIC ANHYDRASE IX TARGETS PRIMARY TUMORS, METASTASES, AND CANCER STEM CELLS: THREE FOR THE PRICE OF ONE. C.T. Supuran, V. Alterio, A. Di Fiore, **K. D' Ambrosio**, F. Carta, S.M. Monti, G. De Simone (2018). Med. Res. Rev. 38, 1799-1836.

THE CRYSTAL STRUCTURE OF A HCA VII VARIANT PROVIDES INSIGHTS INTO THE MOLECULAR DETERMINANTS RESPONSIBLE FOR ITS CATALYTIC BEHAVIOR. M. Buonanno, A. Di Fiore, E. Langella, K. D'Ambrosio, C.T. Supuran, S.M. Monti, G. De Simone (2018) Int. J. Mol. Sci. 19

K. D'Ambrosio, A. Di Fiore, M. Buonanno, S.M. Monti, G. De Simone. η- and θ-Carbonic Anhydrases (2019). In: Carbonic Anhydrases - Biochemistry and Pharmacology of an Evergreen Pharmaceutical Target. Edited by Supuran, C.T. and De Simone, G. Elsevier.

A. Di Fiore, **K. D'Ambrosio**, J. Ayoub, V. Alterio, G. De Simone α–Carbonic Anhydrases (2019). In: Carbonic Anhydrases - Biochemistry and Pharmacology of an Evergreen Pharmaceutical Target. Edited by Supuran, C.T. and Nocentini, A. Elsevier.

EXPLORING BENZOXABOROLE DERIVATIVES AS CARBONIC ANHYDRASE INHIBITORS: A STRUCTURAL AND COMPUTATIONAL ANALYSIS REVEALS THEIR CONFORMATIONAL VARIABILITY AS A TOOL TO INCREASE ENZYME SELECTIVITY. Langella E, Alterio V, **D'Ambrosio K**, Cadoni R, Winum JY, Supuran CT, Monti SM, De Simone G, Di Fiore A. (2019) Journal of Enzyme Inhibition and Medicinal Chemistry; 34(1):1498-1505.

CATECHOLS: A NEW CLASS OF CARBONIC ANHYDRASE INHIBITORS. **D'Ambrosio K,** Carradori S, Cesa S, Angeli A, Monti SM, Supuran CT, De Simone G. Chem. Com. (2020). 56(85):13033-13036.

THE CRYSTAL STRUCTURES OF 2-(4-BENZHYDRYLPIPERAZIN-1-YL)-N-(4-SULFAMOYLPHENYL)ACETAMIDE IN COMPLEX WITH HUMAN CARBONIC ANHYDRASE II AND VII PROVIDE INSIGHTS INTO SELECTIVE CA INHIBITOR DEVELOPMENT. **D'Ambrosio K**, Di Fiore A., Buonanno M, Kumari S, Tiwari M., Supuran CT, Mishra CB, Monti SM and De Simone G New J. Chem., (2021), 45, 147-152.