

DR. VINCENZO ALTERIO

CURRICULUM VITAE

WORK EXPERIENCE

Dates (from – to)	December 2012 - to now
Name and address of employer	National Research Council (CNR) – Institute of Biostructures and Bioimaging (IBB) via Mezzocannone 16 - 80134, Naples
Type of business or sector	Structural Biology
Occupation or position held	Permanent position as researcher (III level - identification number: 11490)
Main activities and responsibilities	Protein crystallization and structure resolution by X-ray diffraction

EDUCATION AND TRAINING

date	December 2004
Name and type of organisation providing education and training	University of Naples "Federico II" C.so Umberto I, 40 - Naples
Principal subjects occupational skills covered	Thesis title "Structural characterization of proteins with biotechnological interest and of modified oligonucleotides"
Title of qualification awarded	Ph.D in Chemistry
date	October 2001
Name and type of organisation providing education and training	University of Naples "Federico II" C.so Umberto I, 40 - Naples
Principal subjects occupational skills covered	Thesis title "Design, synthesis and characterization of peptides usable for the treatment of Parietaria pollinosis"
Title of qualification awarded	Degree in chemistry

RESEARCH ACTIVITIES

Research sectors	Protein crystallography
Recent Scientific Activities	Functional and structural characterization of proteins with biotechnological interest by means of X-ray crystallography. In particular: i) determination of the tridimensional structure of several carbonic anhydrase (CA) isoforms isolated from various organisms (mammals, bacteria, diatoms, plants) and of CA-inhibitor complexes in order to obtain useful information for the rational drug design. ii) study of the structure-activity relationship of esterase isolated from thermophilic and psychrophilic organisms in order to clarify the catalytic mechanism of this enzyme family and to identify the structural determinants responsible for their adaptation to extreme environment conditions.

Participation to financed scientific projects	<p>“Nuovi agenti antitumorali dotati di meccanismo di azione multi-targeting”. Funding institution: PRIN: Progetti di Ricerca di Rilevante Interesse Nazionale – Bando 2017. August 2019-February 2023. Euro 91200.00.</p> <p>“IMPARA - Imaging Dalle Molecole Alla Preclinica”. Funding institution: PON Ricerca e Innovazione 2014-2020 - Azione II.1. June 2019- February 2022. Euro 2451000.00.</p> <p>“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.</p> <p>“Campania Imaging Infrastructure for Research in Oncology (CIRO)”. Funding institution: Regione Campania (POR FESR 2014-2020). January 2018-February 2022. Euro 444260.93.</p> <p>“Study of the Extracellular Interactome of human Carbonic Anhydrase IX (SEICA)”. Funding institution: CNR (Progetto Bandiera "InterOmics"). June 2017-Dicember 2018. Euro 100.000.</p> <p>“Interatomic Study of the Tumor Associated Protein Carbonic Anhydrase IX (ISTAPCA)”. Funding institution: CNR (Progetto Bandiera "InterOmics"). April 2015-Dicember 2015. Euro 100.000.</p> <p>“FARMABIONET, rete integrata per le biotecnologie applicate a molecole ad attività farmacologica”. Funding institution: Regione Campania (Project POR Campania FESR 2007-2013, bando per la Realizzazione della Rete delle Biotecnologie Campane, Obiettivo Operativo 2.1). April 2013-Dicember 2015. Euro 151000.00.</p> <p>“Evoluzione, adattamento e biodiversità delle anidridi carboniche da organismi antartici”. Funding institution: MIUR (PNRA project). June 2014-June 2016. Euro 8.000.</p> <p>“Glycomimetics as CA IX inhibitors: design, synthesis, inhibitory activity and structural characterization”. Funding institution: CNR (bilateral agreements between CNR and CNRS). January 2012-Dicember 2013. Euro 8.000.</p> <p>“Utilizzo dell'enzima CDCA1 dalla diatomea <i>Thalassiosira weissfloghii</i> come biosensore per la determinazione degli ioni metallici nelle acque marine” Funding institution: Regione Campania (Progetto di Ricerca FEP Campania Asse 3 – Misura 3.5 Progetti Pilota ex art. 41). January 2010-Dicember 2015. Euro 163.570,88.</p> <p>“Sviluppo di tecniche diagnostiche per la rivelazione della Brucellosi dei pesci” Funding institution: Regione Campania (Progetto di Ricerca FEP Campania Asse 3 – Misura 3.5 Progetti Pilota ex art. 41). January 2010-Dicember 2015. Euro 176457.00.</p> <p>“Design of zinc metalloproteinase targeted drugs using an Integrated Technology approach (DEZNI)”. Funding institution: UE (VI Framework Programme, contract number N° LSHB-CT-2007-037303). March 2009–June2010. Euro 140.501.</p> <p>“Rete integrata per le biotecnologie applicate a molecole ad attività farmacologica - FarmaBioNet”. Funding institution: Regione Campania (Progetto POR Campania) 2007-2013.</p> <p>“Progettazione e sintesi di molecole da utilizzarsi nello sviluppo di nuove terapie antiobesità”. Funding institution: CNR (Progetto di Ricerca Spontanea a Tema Libero (RSTL)). January 2007-Dicember 2008. Euro 30.000.</p> <p>“CA-inhibitors: cocrystallization of carbonic anhydrase isozymes with Solvay compounds”. Funding institution: Solvay Pharmaceuticals GMBH – Hannover, Germany. November 2007–Dicember 2008. Euro 16.000.</p> <p>“CA-inhibitors: cocrystallization of carbonic anhydrase isozymes with Solvay compounds”. Funding institution: Solvay Pharmaceuticals GMBH – Hannover, Germany. June 2006–May 2007. Euro 15.000</p> <p>“Folding e aggregazione di proteine: metalli e biomolecole nelle malattie conformazionali”. Funding institution: MIUR (Project FIRB RBNE03PX83). March 2005-September 2008. Euro 513000.00.</p> <p>“Analisi strutturale dell'amminoacilasi 1, una proteina dai livelli di espressione alterati in tumori al rene ed alle cellule piccole del polmone”. Funding institution: Regione Campania (L.R. n. 5 - 28/05/2002). January 2002-Dicember 2002. Euro 20.000.</p>
Editorial activity	<p>September 2020: Member of the editorial board of “Molecules” as Topic Editor (EISSN: 1420-3049).</p> <p>October 2015: Member of the editorial board of “International Journal of Agriculture Science and Food Technology” (ISSN: 2455-815X).</p> <p>November 2016: Member of the editorial board of “Chemical and Biomolecular Engineering” (ISSN: 2578-8884).</p> <p>January 2014-January 2016: Member of the editorial board of “Drug Designing: Open Access” (ISSN: 2169-0138).</p> <p>December 2013: Guest Editor for the preparation of the special issue “Recent developments of carbonic anhydrase inhibitors as potential drugs” published on “BioMed Research International” (Hindawi publication).</p>
Organization of international conferences	<p>October 2013: member of the organizing and scientific committee of the international conference “2nd CA satellite meeting”, Naples 23-25/10/2013.</p>

- **Alterio V**, Langella E, Buonanno M, Esposito D, Nocentini A, Berrino E, Bua S, Polentarutti M, Supuran CT, Monti SM, De Simone G. (2021) *Comput Struct Biotechnol J.* 19, 3427-3436.
- De Simone G, Bua S, Supuran CT, **Alterio V**. (2021) *Biochem Biophys Res Commun.* 548, 217-221.
- Sarnella A, D'Avino G, Hill BS, Alterio V, Winum JY, Supuran CT, De Simone G, Zannetti A. (2020) *Int J Mol Sci.* 21, E8405.
- Bozdog M, Supuran CT, Esposito D, Angeli A, Carta F, Monti SM, De Simone G, Alterio V. (2020) *Chem Commun (Camb).* 56, 8297-8300.
- Nocentini A, Alterio V, Bua S, Micheli L, Esposito D, Buonanno M, Bartolucci G, Osman SM, AlOthman ZA, Cirilli R, Pierini M, Monti SM, Di Cesare Mannelli L, Gratteri P, Ghelardini C, De Simone G, Supuran CT. (2020) *J Med Chem.* 63, 5185-5200.
- Alterio V, Kellner M, Esposito D, Liesche-Starnecker F, Bua S, Supuran CT, Monti SM, Zeidler R, De Simone G. (2019) *J Mol Biol.* 431, 4910-4921.
- Langella E, Alterio V, D'Ambrosio K, Cadoni R, Winum JY, Supuran CT, Monti SM, De Simone G, Di Fiore A. (2019) *J Enzyme Inhib Med Chem.* 34, 1498-1505.
- De Simone G, Angeli A, Bozdog M, Supuran CT, Winum JY, Monti SM, Alterio V. (2018) *Chem Commun (Camb).* 54, 10312-10315.
- Supuran CT, Alterio V, Di Fiore A, D'Ambrosio K, Carta F, Monti SM, De Simone G. (2018) *Med Res Rev.* 38, 1799-1836.
- Alterio V, Esposito D, Monti SM, Supuran CT, De Simone G. (2018) *J Enzyme Inhib Med Chem.* 33, 151-157.
- De Simone G, Langella E, Esposito D, Supuran CT, Monti SM, Winum JY, Alterio V. (2017) *J Enzyme Inhib Med Chem.* 32, 1002-1011.
- Bruno E, Buemi MR, Di Fiore A, De Luca L, Ferro S, Angeli A, Cirilli R, Sadutto D, Alterio V, Monti SM, Supuran CT, De Simone G, Gitto R. (2017) *J Med Chem.* 60, 4316-4326.
- Buonanno M, Langella E, Zambrano N, Succoio M, Sasso E, Alterio V, Di Fiore A, Sandomenico A, Supuran CT, Scaloni A, Monti SM, De Simone G. (2017) *ACS Chem Biol.* 12, 1460-1465.
- Alterio V, Cadoni R, Esposito D, Vullo D, Di Fiore A, Monti SM, Caporale A, Ruvo M, Sechi M, Dumy P, Supuran CT, De Simone G, Winum J-Y. (2016) *Chem. Commun (Camb).* 52, 11983-11986.
- Vullo D, Supuran CT, Scozzafava A, De Simone G, Monti SM, Alterio V, Carta F. (2016) *Bioorg Med Chem.* 24, 3643-3648.
- Di Fiore A, De Simone G, Alterio V, Riccio V, Winum JY, Carta F, Supuran CT. (2016) *Org Biomol Chem.* 14, 4853-4858.
- La Regina G, Coluccia A, Famiglini V, Pelliccia S, Monti L, Vullo D, Nuti E, Alterio V, De Simone G, Monti SM, Pan P, Parkkila S, Supuran CT, Rossello A, Silvestri R. (2015) *J Med Chem.* 58, 8564-8572.
- Di Fiore A, Alterio V, Monti SM, De Simone G, D'Ambrosio K. (2015) *Int. J. Mol. Sci.* 16, 15456-15480.
- Di Fiore A, Vergara A, Caterino M, Alterio V, Monti SM, Ombouma J, Dumy P, Vullo D, Supuran CT, Winum JY, De Simone G. (2015) *Chem. Commun. (Camb).* 51, 11519-11522.
- Iqbal J, Al-Rashida M, Durdagi S, Alterio V, Di Fiore A. (2015) *Biomed Res. Int.* doi: 10.1155/2015/174178.
- De Simone G, Monti SM, Alterio V, Buonanno M, De Luca V, Rossi M, Carginale V, Supuran CT, Capasso C, Di Fiore A. (2015) *Bioorg. Med. Chem. Lett.* 25, 2002-2006.
- Alterio V, Langella E, De Simone G, Monti SM. (2015) *Mar. Drugs.* 13, 1688-1697.
- De Simone G, Pizika G, Monti SM, Di Fiore A, Ivanova J, Vozny I, Trapencieris P, Zalubovskis R, Supuran CT, Alterio V. (2014) *Biomed Res Int.* doi: 10.1155/2014/523210.
- Alterio V, Pan P, Parkkila S, Buonanno M, Supuran CT, Monti SM, De Simone G. (2014) *Biopolymers.* 101, 769-778.
- Dathan NA, Alterio V, Troiano E, Vullo D, Ludwig M, De Simone G, Supuran CT, Monti SM. (2014) *J Enzyme Inhib Med Chem.* 29, 500-504.
- Rami M, Dubois L, Parvathaneni NK, Alterio V, van Kuijk SJ, Monti SM, Lambin P, De Simone G, Supuran CT, Winum JY. (2013) *J Med Chem.* 56, 8512-8520.
- De Simone G, Alterio V, Supuran CT. (2013) *Expert Opin Drug Discov.* 8, 793-810.
- Alterio V, Di Fiore A, D'Ambrosio K, Supuran CT, De Simone G. (2012) *Chem Rev.* 112, 4421-4468.
- Alterio V, Langella E, Viparelli F, Vullo D, Ascione G, Dathan NA, Morel FM, Supuran CT, De Simone G, Monti SM. (2012) *Biochimie.* 94, 1232-1241
- Truppo E, Supuran CT, Sandomenico A, Vullo D, Innocenti A, Di Fiore A, Alterio V, De Simone G, Monti SM. (2012) *Bioorg Med Chem Lett.* 22, 1560-1564.
- Di Fiore A, Maresca A, Alterio V, Supuran CT, De Simone G. (2011) *Chemical Communications.* 47, 11636-11638.
- Correale S, Pirone L, Di Marcotullio L, De Smaele E, Greco A, Mazzà D, Moretti M, Alterio V, Vitagliano L, Di Gaetano S, Gulino A, Pedone EM (2011) *Biochimie.* 93, 715-724.

- Di Fiore A, Truppo E, Supuran CT, Alterio V, Dathan N, Booterabi F, Parkkila S, Monti SM, De Simone G. (2010) *Bioorganic & Medicinal Chemistry Letters*. 20, 5023-5026.
- Supuran CT, Di Fiore A, Alterio V, Monti SM, De Simone G. (2010) *Current Pharmaceutical Design*. 16, 3246-3254.
- Alterio V, Aurilia V, Romanelli A, Parracino A, Saviano M, D'Auria S, De Simone G. (2010) *Biopolymers*. 93, 669-677.
- Alterio V, Monti SM, Truppo E, Pedone C, Supuran CT, De Simone G. (2010) *Organic & Biomolecular Chemistry*. 8, 3528-3533.
- Alterio V, Hilvo M, Di Fiore A, Supuran CT, Pan P, Parkkila S, Scaloni A, Pastorek J, Pastorekova S, Pedone C, Scozzafava A, Monti SM, De Simone G. (2009) *PNAS*. 106, 16233-16238.
- Vitale RM, Alterio V, Innocenti A, Winum JY, Monti SM, De Simone G, Supuran CT. (2009) *Journal of Medicinal Chemistry*. 52, 5990-5998.
- Mandrich L, Menchise V, Alterio V, De Simone G, Pedone C, Rossi M, Manco G. (2008) *Proteins*. 71, 1721-1731.
- Alterio V, De Simone G, Monti SM, Scozzafava A, Supuran CT. (2007) *Bioorganic & Medicinal Chemistry Letters*. 17, 4201-4207.
- Alterio V, Vitale RM, Monti SM, Pedone C, Scozzafava A, Cecchi A, De Simone G, Supuran CT. (2006) *Journal of the American Chemical Society*. 128, 8329-8335.
- Capiello M, Alterio V, Amodeo P, Del Corso A, Scaloni A, Pedone C, Meschini R, De Donatis GM, De Simone G, Mura U. (2006) *Biochemistry*. 45, 3226-3234.
- Menchise V, De Simone G, Alterio V, Di Fiore A, Pedone C, Scozzafava A, Supuran CT. (2005) *Journal of Medicinal Chemistry*. 48, 5721-5727.
- De Simone G, Menchise V, Alterio V, Mandrich L, Rossi M, Manco G, Pedone C. (2004) *Journal of Molecular Biology*. 343, 137-147.

Book chapters

- Di Fiore A, D'Ambrosio K, Ayoub J, **Alterio V**, De Simone G. (2019) α -carbonic anhydrases. In "Carbonic anhydrases - biochemistry and pharmacology of an evergreen pharmaceutical target". Eds Supuran CT and Nocentini A. Elsevier, New York.
- Langella E, De Simone G, Esposito D, **Alterio V**, Monti SM. (2019) ζ -carbonic anhydrases. In "Carbonic anhydrases - biochemistry and pharmacology of an evergreen pharmaceutical target". Eds Supuran CT and Nocentini A. Elsevier, New York.
- Monti SM, De Simone G, Supuran CT, **Alterio V**. (2015) CDCA1 from *Thalassiosira weissflogii* as representative member of ζ -class CAs: general features and Biotechnological Applications. In "The Carbonic Anhydrases as Biocatalysts". Eds De Simone G. and Supuran CT. Elsevier, New York, pp. 351-359.
- **Alterio V**, Monti SM, De Simone G. (2014) Thermal-stable carbonic anhydrases: a structural overview. In "Carbonic Anhydrase: Mechanism, Regulation, Links to Disease, and Industrial Applications, Subcellular Biochemistry" Eds: Frost SC and McKenna R. Springer. 75, 387-404.
- **Alterio V**, Di Fiore A, D'Ambrosio K, Supuran CT, De Simone G. (2009) X-Ray crystallography of carbonic anhydrase inhibitors and its importance in drug design. In "Drug design of zinc-enzyme inhibitors: functional, structural, and disease applications". Eds: Supuran CT and Winum J-Y. Wiley, Hoboken, pp. 73 - 138.