

Stefano Capaldi

Associate professor
Biocrystallography Laboratory
Department of Biotechnology, University of Verona
Cà Vignal 1, Strada Le Grazie 15, 37134 Verona, ITALY
Telephone: +39 045 802.7959
Fax: +39 045 802.7929
Email: stefano.capaldi@univr.it

Stefano Capaldi graduated from the University of Milan on 27/10/2000 in Pharmaceutical Chemistry and Technology. He was awarded the Philosophiae Doctor degree in Agroindustrial Biotechnology by the University of Verona on 30/03/2004 with the thesis entitled "The Three Dimensional Crystal Structure Of Carp Fish Egg Lectin" (supervisor Prof. Hugo L. Monaco). From January 2005 to February 2007 he held a Post Doc fellowship at the Biocrystallography Laboratory of the University of Verona with the research project: "Structural studies on hydrophobic molecule - binding proteins". Since March 2008 he has been a research fellow and since April 2022 an associate professor in Molecular Biology at the Department of Biotechnology, University of Verona.

Employment history:

Apr 2022 – present: Associate Professor in Molecular Biology, Department of Biotechnology, University of Verona, Italy.

Mar 2008 – Mar 2022: Assistant Professor in Molecular Biology, Department of Biotechnology, University of Verona, Italy.

Jan 2005 – Feb 2008: Post-doc at the Biocrystallography laboratory, University of Verona, Italy.

Education & Qualifications:

Jan 2001 – Jan 2004: PhD in Agro-industrial Biotechnology, University of Verona, Italy. (Supervisor Prof. Hugo L. Monaco).

Oct 1994 – Oct 2000: Master Degree in Pharmaceutical Chemistry and Technology. University of Milan, Italy.

10 Apr 2017: National Scientific Qualification for Associate Professor in Molecular Biology, (05/E2, BIO/11).

Main Research activities and results

Structural studies of proteins involved in the transport of hydrophobic molecules

Stefano Capaldi began his research activity during the master thesis with the characterization of a protein belonging to the Fatty-acid Binding Proteins (FABPs) family involved in the transport of hydrophobic molecules and bile acids. During his PhD, and subsequently as post-doc in Verona, he continued the study of this class of proteins, solving different structures of protein-ligand complexes and contributing to the definition of the binding specificity and the physiological function of some of them.

Structural studies of fungal lectins with anticancer properties

During his research activity in the group of Prof. Monaco, he contributed to the structural characterization of lectins obtained from various natural sources (one of which was the subject of his doctoral thesis). His activity in this field has led to the resolution of the structure and the characteriza-

tion of the binding properties of various lectins with interesting antiproliferative and anticancer properties extracted from various species of edible fungi.

Structural studies of proteins involved in the processes of apoptosis or cell proliferation

Over the years he has also dealt with the structural characterization of some proteins involved in cell proliferation processes, in particular a protein that binds the insulin-like growth factor 1 (IGFBP1) and a protein (SOUL) involved in the regulation of the apoptotic cascade through the interaction with the well-known antiapoptotic factor Bcl-XL.

Structural studies of membrane proteins

While he was visiting scientist at the MPC (Membrane protein crystallization) group at Imperial College London, he worked on some projects about the structural characterization of membrane proteins. In particular, he contributed to the determination of the structure of the eukaryotic transporter UapA. At the same time, as part of a project in collaboration with Prof. PS. Chae, he contributed to the characterization of innovative detergents developed for the study of membrane proteins.

Structural and functional characterization of GPCR receptors and other proteins involved in neurological and neurodegenerative diseases

In recent years he focused on proteins involved in pathological processes affecting the nervous system and neurodegenerative diseases. He undertook the characterization of a G-protein-coupled receptor involved in the onset of Alzheimer's disease (GPR3) and the study of another GPCR crucial for myelin degeneration in multiple sclerosis (the latter the subject of two research funded by FISM - Italian Multiple Sclerosis Foundation, in which the former participates as a member and in the latter as unit coordinator. In addition, he has participated and continues to work on several projects aimed at characterizing the processes of formation of amyloid aggregates by intrinsically disordered proteins (IDPs) including α -synuclein and Tau protein.

Structural studies of photosynthetic complexes

Recently, in collaboration with the group led by Prof. Bassi and Prof. Dall'osto at the Department of Biotechnology, he has been working on the structural characterization of photosynthetic complexes using cryo-electron microscopy (cryo-EM). In recent years, he has determined the structure of mutants of the photosystem I of *A. thaliana* and of a new PS supercomplex identified in *P. oceanica*.

Development of innovative diagnostic methods for the identification of amyloid aggregates in biological samples

He actively collaborates with the group of Prof. Zanusso of the Department of Neuroscience of Verona in the development of diagnostic methods for the detection of the presence of amyloid aggregates in biological samples, and in particular in the nasal mucosa, by means of RT-QuIC (real-time quaking-induced conversion) assays. In particular, he is responsible for the optimization of protocols for the expression and purification of engineered recombinant proteins used as substrates for aggregation assays.

Bibliometric indexes (September 2026)

- Total number of publications: 61
- H index: 24 (Scopus)
- Total number of citations: 2034 (Scopus)
- Orcid iD: 0000-0003-4632-8100
- Structures deposited in the Protein Data Bank (PDB): 62

Grants

1) PRIN2022 (2022JNF57Y, PI prof. M. Barile)

Italian Ministry of Universities and Research

220K Euro

04/02/2025-03/02/2027

Title: How human cells form and distribute the redox cofactor, FAD - Remaining challenges in health and disease

Role on Project: Coordinator of Research Unit

2) Joint Projects 2019 (JPVR19S9PT)

University of Verona

20K Euro

01/12/2020-30/11/2021

Title: investigation of cyanobacteria in Lessinia caves: capturing the light in near-dark environments

Role on Project: PI

3) Research Project call 2018 Grant (grant 2018/R/21, PI prof. L. Trincavelli)

Fondazione Italiana Sclerosi Multipla (FISM)

235K Euro

01/02/2019-31/04/2022

Title: Crystal structure and functional characterization of the GPR17 receptor, a novel pharmacological target for remyelination therapy in multiple sclerosis

Role on Project: Coordinator of Research Unit

4) Research Project call 2015 Grant (grant 2015/R/11, PI Dr.. M. Degano)

Fondazione Italiana Sclerosi Multipla (FISM)

150K Euro

01/03/2016-28/02/2017

Title: Crystal structure and functional characterization of the GPR17 receptor, a novel pharmacological target for remyelination therapy in multiple sclerosis

Role on Project: Co-PI of Research Unit

Individual research grants:

- Dec 2017: Individual Funding of Basic Research Activities from MIUR (amount € 3000).
- Cooperint 2008 – Junior Research Program, Mobility grant from the University of Verona (3600 Euro).
- Cooperint 2014 – Staff Mobility Program, Mobility grant from the University of Verona (4500 Euro).

Participation in Research Projects

- 2003-2006: Co-worker in the FIRB project n. RBNE03B8KK “Metodologie e tecnologie innovative per la farmaceutica”, coordinator Prof. Monaco.
- 2008-2010: Co-worker in the project: Structural and functional characterization of human-prostaglandin D synthase, grant Fondazione Cariverona 2008 to H-L. Monaco.
- 2011-2014: participant in the project: Verona Nanomedicine Initiative, Fondazione Cariverona.
- 2016-2020: participant in the ERC Starting Grant 2015 SOLENALGAE- 679814 to M. Ballottari.
- 2019-2022: participant in the project: “Development and validation of a novel molecular as-

say for alpha-synuclein in patients with Parkinson disease and other alpha-synucleinopathies”. Fondazione Cariverona - Bando Ricerca Scientifica di Eccellenza 2018, coordinatore Prof. Zanusso.

Visiting scientist experiences

Nov 06 – Jan 07: Universidad Nacional de Cordoba (Argentina), Glycobiology laboratory (led by Dr. J.A. Curtino).

Grant: Scientific Cooperation Italy-Argentina 2006-2007, Italian Ministry of Foreign Affairs.

May 10 – Aug 10: MPC (Membrane Protein Crystallization) Group (led by Dr. B.Byrne), Imperial College, London (UK).

Grant: Cooperint 2008, University of Verona.

May 15 – Aug 15: MPC (Membrane Protein Crystallization) Group (led by Dr. B.Byrne), Imperial College, London (UK).

Grant: Cooperint 2014, University of Verona.

Technical skills and competences

Strong expertise in:

- Heterologous protein expression in prokaryotic (*E.coli*) and eukaryotic (*S.cerevisiae*, *P.pastoris*, Baculovirus/insect cells) systems
- Protein purification
- Crystallization and data collection
- Phasing, model building and structure refinement
- Biochemical functional assays

Principal scientific collaborations

- Prof. G. Zanusso, University of Verona, Italy.
- Prof. I. Eberini, University of Milan, Italy.
- Prof. R. Bassi, University of Verona, Italy.
- Prof. L. Bubacco e Dr. L. Civiero, University of Padova, Italy.
- Dr. E. Esposito, CNR, Naples, Italy.
- Dr. B. Byrne, MPC group, Imperial College, London, UK.
- Dr. M.E. Carrizo, Universidad Nacional de Cordoba, Argentina.

Teaching

- Molecular Biology (6 CFU), Degree in Bioinformatics, University of Verona.
- Laboratory of Molecular Biology (2 CFU lectures + 4 CFU practical), Degree in Bioinformatics, University of Verona.

Meeting organization

- Member of the Organizing Committee of the 41° Meeting of the Italian Crystallography Association (AIC), Verona 11-14 Sep 2012.

Membership

- Member of the Italian Crystallography Association (AIC)

Full List of Publications (* corresponding author)

- Amelii A, **Capaldi S**, Russo M, Guardini Z, Sanità G, Esposito E, Olivé I, Maiuri M, Dall'Osto L, Cerullo G, Procaccini G, Bassi R. Structural and spectral adaptation of the seagrass *Posidonia oceanica* photosystem I to seabed light. *Nat Commun*. 2026 Jul 16;17(1):6135.
- Carrello M, Busatta F, Ramos-Martín F, Sperotto A, Trivellato D, Leo G, Viola G, Gori D, D'Onofrio M, **Capaldi S**, D'Amelio N, Assfalg M. Alpha-synuclein-decorated nanoconjugates targeting alpha-synuclein assembly. *Int J Biol Macromol*. 2026 Sep;375:153505. Epub 2026 Jul 13.
- Palazzolo L, Daniele S, Bianchi D, Russo L, **Capaldi S**, Trincavelli ML, Eberini I. Sodium Ions Affect GPR17 Conformational States and Functionality. *Proteins*. 2026 Jul 12. Epub ahead of print.
- Hoffmann MP, Caferri R, Lam H, **Capaldi S**, Dall'Osto L, Bassi R, Schlau-Cohen GS. LHCSR1 Functions as a Dimmer Switch for Light Harvesting. *J Phys Chem Lett*. 2026 Jul 16;17(28):7840-7851.
- Rabuffetti M, Rinaldi F, Palazzolo L, Bianchi D, Trincavelli ML, Balloni I, Daniele S, **Capaldi S**, Speranza G, Eberini I, Calleri E. Structure-Guided Prioritization and Synthesis of New Ligands for GPR17 Receptor. *ACS Omega*. 2026 Jun 6;11(24):35411-35420.
- Sanità G, Maresca E, **Capaldi S**, Casillo A, Aulitto M, Donadio F, Pape T, Corsaro MM, Esposito E, Contursi P. CryoEM structural analysis of a thermophilic galactooligosaccharides-producer β -galactosidase unravels an uncommon oligomeric structure. *Int J Biol Macromol*. 2026 May;362:151980.
- Amelii A, Cutolo EA, Montepietra D, Battarra C, Caferri R, **Capaldi S**, Guardini Z, Dall'Osto L, Bassi R. Photosynthesis under far-red light-evolutionary adaptations and bio-engineering of light-harvesting complexes. *FEBS Lett*. 2026 Jan;600(2):164-187.
- **Capaldi S**, Guardini Z, Montepietra D, Pagliuca VF, Amelii A, Betti E, John C, Pedraza-González L, Cupellini L, Mennucci B, Bonnet DMV, Chaves-Sanjuan A, Dall'Osto L, Bassi R. Structural determinants for red-shifted absorption in higher-plants Photosystem I. *New Phytol*. 2025 Dec;248(5):2331-2346.
- Tira R, Leo G, Prandini L, Barracchia CG, D'Onofrio M, Mollica L, **Capaldi S**, Assfalg M, Munari F. Multiple and Alternative Sites Make Tau Protein an Adaptable Sticky Surface for the SH3 Domain of Fyn Kinase. *Angew Chem Int Ed Engl*. 2025 Jul 7;64(28):e202504292.
- Trivellato D, Munari F, Assfalg M, **Capaldi S***, D'Onofrio M. Untangling the Complexity and Impact of Tau Protein Ubiquitination. *Chembiochem*. 2024 Nov 18;25(22):e202400566.
- Bettin I, Brattini M, Kachoe EA, **Capaldi S**, Thalappil MA, Bernardi P, Ferrarini I, Fuhrmann G, Mariotto S, Butturini E. Extracellular Vesicles based STAT3 delivery as innovative therapeutic approach to restore STAT3 signaling deficiency. *N Biotechnol*. 2024 Sep 25;82:43-53.

- Leo G, Leone P, Ataie Kachoie E, Tolomeo M, Galluccio M, Indiveri C, Barile M, **Capaldi S***. Structural insights into the bifunctional enzyme human FAD synthase. *Structure*. 2024 Jul 11;32(7):953-965.e5.
- Sardar S, Caferri R, Camargo FVA, **Capaldi S**, Ghezzi A, Dall'Osto L, D'Andrea C, Cerullo G, Bassi R. Site-Directed Mutagenesis of the Chlorophyll-Binding Sites Modulates Excited-State Lifetime and Chlorophyll-Xanthophyll Energy Transfer in the Monomeric Light-Harvesting Complex CP29. *J Phys Chem Lett*. 2024 Mar 21;15(11):3149-3158.
- Parolini F, Ataie Kachoie E, Leo G, Civiero L, Bubacco L, Arrigoni G, Munari F, Assfalg M, D'Onofrio M, **Capaldi S***. Site-Specific Ubiquitination of Tau Amyloids Promoted by the E3 Ligase CHIP. *Angew Chem Int Ed Engl*. 2023 Dec 11;62(50):e202310230.
- Tira R, Viola G, Barracchia CG, Parolini F, Munari F, **Capaldi S**, Assfalg M, D'Onofrio M. Espresso Coffee Mitigates the Aggregation and Condensation of Alzheimer's Associated Tau Protein. *J Agric Food Chem*. 2023 Aug 2;71(30):11429-11441.
- Daniele S, Saporiti S, **Capaldi S**, Pietrobono D, Russo L, Guerrini U, Laurenzi T, Ataie Kachoie E, Palazzolo L, Russo V, Abbracchio MP, Eberini I, Trincavelli ML. Functional Heterodimerization between the G Protein-Coupled Receptor GPR17 and the Chemokine Receptors 2 and 4: New Evidence. *Int J Mol Sci*. 2022 Dec 23;24(1):261.
- Viola G, Barracchia CG, Tira R, Parolini F, Leo G, Bellanda M, Munari F, **Capaldi S**, D'Onofrio M, Assfalg M. New Paradigm for Nano-Bio Interactions: Multimolecular Assembly of a Prototypical Disordered Protein with Ultrasmall Nanoparticles. *Nano Lett*. 2022 Nov 23;22(22):8875-8882.
- Bongianini M, Catalan M, Perra D, Fontana E, Janes F, Bertolotti C, Sacchetto L, **Capaldi S**, Tagliapietra M, Polverino P, Tommasini V, Bellavita G, Kachoie EA, Baruca R, Bernardini A, Valente M, Fiorini M, Bronzato E, Tamburin S, Bertolasi L, Brozzetti L, Cecchini MP, Gigli G, Monaco S, Manganotti P, Zanusso G. Olfactory swab sampling optimization for α -synuclein aggregate detection in patients with Parkinson's disease. *Transl Neurodegener*. 2022 Jul 28;11(1):37.
- Barracchia CG, Parolini F, Volpe A, Gori D, Munari F, **Capaldi S**, D'Onofrio M, Assfalg M. Camouflaged Fluorescent Silica Nanoparticles Target Aggregates and Condensates of the Amyloidogenic Protein Tau. *Bioconjug Chem*. 2022 Jul 20;33(7):1261-1268. doi: 10.1021/acs.bioconjchem.2c00168.
- Sardar S, Caferri R, Camargo FVA, Pamos Serrano J, Ghezzi A, **Capaldi S**, Dall'Osto L, Bassi R, D'Andrea C, Cerullo G.J. Molecular mechanisms of light harvesting in the minor antenna CP29 in near-native membrane lipidic environment. *Chem Phys*. 2022 May 28;156(20):205101.
- Munari F, Mollica L, Valente C, Parolini F, Kachoie EA, Arrigoni G, D'Onofrio M, **Capaldi S***, Assfalg M. Structural Basis for Chaperone-Independent Ubiquitination of Tau Protein by Its E3 Ligase CHIP. *Angew Chem Int Ed Engl*. 2022 Apr 4;61(15):e202112374.
- Parolini F, Tira R, Barracchia CG, Munari F, **Capaldi S**, D'Onofrio M, Assfalg M. Ubiquitination of Alzheimer's-related tau protein affects liquid-liquid phase separation in a site- and cofactor-dependent manner. *Int J Biol Macromol*. 2022 Mar 15;201:173-181.

- Perra D, Bongianni M, Novi G, Janes F, Bessi V, **Capaldi S**, Sacchetto L, Tagliapietra M, Schenone G, Morbelli S, Fiorini M, Cattaruzza T, Mazzon G, Orrù CD, Catalan M, Polverino P, Bernardini A, Pellitteri G, Valente M, Bertolotti C, Nacmias B, Maggiore G, Cavallaro T, Manganotti P, Gigli G, Monaco S, Nobili F, Zanusso G. Alpha-synuclein seeds in olfactory mucosa and cerebrospinal fluid of patients with dementia with Lewy bodies. *Brain Commun.* 2021 Mar 22;3(2):fcab045.
- Stefani A, Iranzo A, Holzkecht E, Perra D, Bongianni M, Gaig C, Heim B, Serradell M, Sacchetto L, Garrido A, **Capaldi S**, Sánchez-Gómez A, Cecchini MP, Mariotto S, Ferrari S, Fiorini M, Schmutzhard J, Cocchiara P, Vilaseca I, Brozzetti L, Monaco S, Jose Marti M, Seppi K, Tolosa E, Santamaria J, Högl B, Poewe W, Zanusso G; SINBAR (Sleep Innsbruck Barcelona) group. Alpha-synuclein seeds in olfactory mucosa of patients with isolated REM sleep behaviour disorder. *Brain.* 2021 May 7;144(4):1118-1126.
- Munari F, Barracchia CG, Franchin C, Parolini F, **Capaldi S**, Romeo A, Bubacco L, Assfalg M, Arrigoni G, D'Onofrio M. Semisynthetic and Enzyme-Mediated Conjugate Preparations Illuminate the Ubiquitination-Dependent Aggregation of Tau Protein. *Angew Chem Int Ed Engl.* 2020 Apr 16;59(16):6607-6611.
- Fiorini M, Iselle G, Perra D, Bongianni M, **Capaldi S**, Sacchetto L, Ferrari S, Mombello A, Vascellari S, Testi S, Monaco S, Zanusso G. High Diagnostic Accuracy of RT-QuIC Assay in a Prospective Study of Patients with Suspected sCJD. *Int J Mol Sci.* 2020 Jan 30;21(3):880.
- Capelli D, Parravicini C, Pochetti G, Montanari R, Temporini C, Rabuffetti M, Trincavelli ML, Daniele S, Fumagalli M, Saporiti S, Bonfanti E, Abbracchio MP, Eberini I, Ceruti S, Calleri E, **Capaldi S***. Surface Plasmon Resonance as a Tool for Ligand Binding Investigation of Engineered GPR17 Receptor, a G-Protein Coupled Receptor Involved in Myelination. *Front. Chem.* 2020 Jan 10;7:910.
- Perduca M, Destefanis L, Bovi M, Galliano M, Munari F, Assfalg M, Ferrari F, Monaco HL, **Capaldi S***. Structure and properties of the oyster mushroom (*Pleurotus ostreatus*) lectin. *Glycobiology.* 2020 Jul 16;30(8):550-562.
- Bongianni M, Ladogana A, **Capaldi S**, Klotz S, Baiardi S, Cagnin A, Perra D, Fiorini M, Poleggi A, Legname G, Cattaruzza T, Janes F, Tabaton M, Ghetti B, Monaco S, Kovacs GG, Parchi P, Pocchiari M, Zanusso G. α -Synuclein RT-QuIC assay in cerebrospinal fluid of patients with dementia with Lewy bodies. *Ann Clin Transl Neurol.* 2019 Oct;6(10):2120-2126.
- **Capaldi S**, Suku E, Antolini M, Di Giacobbe M, Giorgetti A and Buffelli M. Allosteric sodium binding cavity in GPR3: a novel player in modulation of A β production. *Sci Rep.* 2018 Jul 23;8(1):11102.
- Toloe J, Taschenberger G, Leite K, Stahlberg M, Spelbrink G, Kues J, Munari F, **Capaldi S**, Becker S, Zweckstetter M, Dean C, Bahr M and Kügler S. Pathophysiological consequences of neuronal α -Synuclein overexpression: impacts on ion homeostasis, stress signalling, mitochondrial integrity and electrical activity. *Front Mol Neurosci.* 2018 Mar 7;11:49.
- D'Onofrio M, Zanzoni S, Munari F, Monaco HL, Assfalg M, **Capaldi S***. The long variant of human ileal bile acid-binding protein associated with colorectal cancer exhibits sub-cellu-

lar localization and lipid binding behaviour distinct from those of the common isoform. *Biochim Biophys Acta*. 2017 Sep;1861(9):2315-2324.

- Bongianini M, Orrù C, Groveman BR, Sacchetto L, Fiorini M, Tonoli G, Triva G, **Capaldi S**, Testi S, Ferrari S, Cagnin A, Ladogana A, Poleggi A, Colaizzo E, Tiple D, Vaianella L, Castriciano S, Marchioni D, Hughson AG, Imperiale D, Cattaruzza T, Fabrizi GM, Pochiari M, Monaco S, Caughey B, Zanusso G. Diagnosis of Human Prion Disease Using Real-Time Quaking-Induced Conversion Testing of Olfactory Mucosa and Cerebrospinal Fluid Samples. *JAMA Neurol*. 2017 Feb 1;74(2):155-162.
- Pinnola A, Staleva-Musto H, **Capaldi S**, Ballottari M, Bassi R, Polívka T. Electron transfer between carotenoid and chlorophyll contributes to quenching in the LHCSR1 protein from *Physcomitrella patens*. *Biochim Biophys Acta*. 2016 Sep 7;1857(12):1870-1878.
- Alguel Y, Amillis S, Leung J, Lambrinidis G, **Capaldi S**, Scull NJ, Craven G, Iwata S, Armstrong A, Mikros E, Dhalluin S, Cameron AD, Byrne B. Structure of eukaryotic purine/H⁽⁺⁾ symporter UapA suggests a role for homodimerization in transport activity. *Nat Commun*. 2016 Apr 18;7:11336.
- Sadaf A, Mortensen JS, **Capaldi S**, Tikhonova E, Hariharan P, de Castro Ribeiro O, Loland CJ, Guan L, Byrne B, Chae PS. A Class of Rigid Linker-bearing Glucosides for Membrane Protein Structural Study. *Chem Sci*. 2016 Mar 1;7(3):1933-1939.
- Pinnola A, Ghin L, Gecchele E, Merlin M, Alboresi A, Avesani L, Pezzotti M, **Capaldi S**, Cazzaniga S, Bassi R. Heterologous Expression of Moss Light-harvesting Complex Stress-related 1 (LHCSR1), the Chlorophyll a-Xanthophyll Pigment-protein Complex Catalyzing Non-photochemical Quenching, in *Nicotiana sp.* *J Biol Chem*. 2015 Oct 2;290(40):24340-54.
- **Capaldi S**, Faggion B, Carrizo M.E., Destefanis L, Gonzalez M.C., Perduca M, Bovi M, Galliano M, Monaco H.L. Three-dimensional structure and ligand-binding site of carp fish lectin (FEL). *Acta Crystallogr D Biol Crystallogr*. 2015 May;71(Pt 5):1123-35.
- Perduca M, Bovi M, Bertinelli M, Bertini E, Destefanis L, Carrizo ME, **Capaldi S**, Monaco HL. High-resolution structures of mutants of residues that affect access to the ligand-binding cavity of human lipocalin-type prostaglandin D synthase. *Acta Crystallogr D Biol Crystallogr*. 2014 Aug;70(Pt 8):2125-38.
- Plotegher N, Kumar D, Tessari I, Brucale M, Munari F, Tosatto L, Belluzzi E, Greggio E, Bisaglia M, **Capaldi S**, Aioanei D, Mammi S, Monaco HL, Samo B, Bubacco L. The chaperone-like protein 14-3-3 η interacts with human α -synuclein aggregation intermediates rerouting the amyloidogenic pathway and reducing α -synuclein cellular toxicity. *Hum Mol Genet*. 2014 Nov 1;23(21):5615-29.
- Merlin M, Gecchele E, **Capaldi S**, Pezzotti M, Avesani L. Comparative evaluation of recombinant protein production in different biofactories: the green perspective. *Biomed Res Int*. 2014;2014:136419. Review.
- De Berti FP, **Capaldi S**, Ferreyra R, Burgardt N, Acierno JP, Klinke S, Monaco HL, Ermácora MR. The crystal structure of sterol carrier protein 2 from *Yarrowia lipolytica* and the evolutionary conservation of a large, non-specific lipid-binding cavity. *J Struct Funct Genomics*. 2013 Dec;14(4):145-53.

- Avesani L, Merlin M, Gecchele E, **Capaldi S**, Brozzetti A, Falorni A, Pezzotti M. Comparative analysis of different biofactories for the production of a major diabetes autoantigen. *Transgenic Research*. 2013 Apr;23(2):281-91.
- Bovi M, Cenci L, Perduca M, **Capaldi S**, Carrizo ME, Civiero L, Chiarelli LR, Galliano M, Monaco HL. BEL β -trefoil: a novel lectin with antineoplastic properties in king bolete (*Boletus edulis*) mushrooms. *Glycobiology*. 2013 May;23(5):578-92.
- Chae PS, Rana RR, Gotfryd K, Rasmussen SG, Kruse AC, Cho KH, **Capaldi S**, Carlsson E, Kobilka B, Loland CJ, Gether U, Banerjee S, Byrne B, Lee JK, Gellman SH. Glucose-neopentyl glycol (GNG) amphiphiles for membrane protein study. *Chem Commun (Camb)*. 2013 Mar 21;49(23):2287-9.
- Risso VA, Acierno JP, **Capaldi S**, Monaco HL, Erm  cora MR. X-ray evidence of a native state with increased compactness populated by tryptophan-less *B. licheniformis* β -lactamase. *Protein Sci*. 2012 Jul;21(7):964-76.
- Ambrosi E, **Capaldi S**, Bovi M, Saccomani G, Perduca M, Monaco HL. Structural changes in the BH3 domain of SOUL protein upon interaction with the anti-apoptotic protein Bcl-xL. *Biochem J*. 2011 Sep 1;438(2):291-301.
- Bovi M, Carrizo ME, **Capaldi S**, Perduca M, Chiarelli LR, Galliano M, Monaco HL. Structure of a lectin with antitumoral properties in king bolete (*Boletus edulis*) mushrooms. *Glycobiology*. 2011 Aug;21(8):1000-9.
- **Capaldi S**, Saccomani G, Fessas D, Signorelli M, Perduca M, Monaco HL. The X-ray structure of zebrafish (*Danio rerio*) ileal bile acid-binding protein reveals the presence of binding sites on the surface of the protein molecule. *J Mol Biol*. 2009 Jan 9;385(1):99-116.
- Tarter M, m**Capaldi S**, Carrizo ME, Ambrosi E, Perduca M, Monaco HL. Crystal structure of human cellular retinol-binding protein II to 1.2 Å resolution. *Proteins*. 2008 Mar;70(4):1626-30.
- **Capaldi S**, Guariento M, Saccomani G, Fessas D, Perduca M, Monaco HL. A single amino acid mutation in zebrafish (*Danio rerio*) liver bile acid-binding protein can change the stoichiometry of ligand binding. *J Biol Chem*. 2007 Oct 19;282(42):31008-18.
- **Capaldi S**, Perduca M, Faggion B, Carrizo ME, Tava A, Ragona L, Monaco HL. Crystal structure of the anticarcinogenic Bowman-Birk inhibitor from snail medic (*Medicago scutellata*) seeds complexed with bovine trypsin. *J Struct Biol*. 2007 Apr;158(1):71-9.
- **Capaldi S**, Guariento M, Perduca M, Di Pietro SM, Santom   JA, Monaco HL. Crystal structure of axolotl (*Ambystoma mexicanum*) liver bile acid-binding protein bound to cholic and oleic acid. *Proteins*. 2006 Jul 1;64(1):79-88.
- Sala A, **Capaldi S**[#], Campagnoli M, Faggion B, Lab   S, Perduca M, Romano A, Carrizo ME, Valli M, Visai L, Minchiotti L, Galliano M, Monaco HL. Structure and properties of the C-terminal domain of insulin-like growth factor-binding protein-1 isolated from human amniotic fluid. *J Biol Chem*. 2005 Aug 19;280(33):29812-9. [#]**co-first author**
- Zanusso G, Fiorini M, Farinazzo A, Gelati M, Benedetti MD, Ferrari S, Dalla Libera A, Ca-

Capaldi S, Monaco HL, Rizzuto N, Monaco S. Phosphorylated 14-3-3zeta protein in the CSF of neuroleptic-treated patients. *Neurology*. 2005 May 10;64(9):1618-20.

- Carrizo ME, **Capaldi S**, Perduca M, Irazoqui FJ, Nores GA, Monaco HL. The antineoplastic lectin of the common edible mushroom (*Agaricus bisporus*) has two binding sites, each specific for a different configuration at a single epimeric hydroxyl. *J Biol Chem*. 2005 Mar 18;280(11):10614-23.
- Nichesola D, Perduca M, **Capaldi S**, Carrizo ME, Righetti PG, Monaco HL. Crystal structure of chicken liver basic fatty acid-binding protein complexed with cholic acid. *Biochemistry*. 2004 Nov 9;43(44):14072-9.
- Carrizo ME, Irazoqui FJ, Lardone RD, Nores GA, Curtino JA, **Capaldi S**, Perduca M, Monaco HL. Crystallization and preliminary X-ray study of the common edible mushroom (*Agaricus bisporus*) lectin. *Acta Crystallogr D* 2004 Apr;60(Pt 4):718-20.
- Beringhelli T, Goldoni L, **Capaldi S**, Bossi A, Perduca M, Monaco HL. Interaction of chicken liver basic fatty acid-binding protein with fatty acids: a ¹³C NMR and fluorescence study. *Biochemistry*. 2001 Oct 23;40(42):12604-11.