Curriculum Vitae et Studiorum

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Associate Professor

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SPOKEN LANGUAGES

- **Italian:** mother-tongue; **English:** Fluent; **Spanish:** Beginner; **German:** Beginner

EDUCATION/ACADEMIC POSITIONS

- **June 2017 – present:** Associate Professor of Biochemistry and Bioinformatics (SSD BIO/10) at the University of Verona, School of Medicine and Surgery, Italy
- **December 2011 – June 2017:** Assistant Professor of Biochemistry, (SSD BIO/10); University of Verona, Italy. Adjunct Professor of Bioinformatics, University of Verona, Italy
- **August 2009 – December 2011**: Alexander von Humboldt Research fellow at the Department of Biology and Environmental Sciences, University of Oldenburg, Germany.
- **March 2009- June-2009**: FEBS Research Fellow (short visit grant) at the Department of Biophysical Chemistry, Lund University, Sweden.
- **February 2007 – February 2009:** Post-Doc position at the Department of Chemistry and Dulbecco Telethon Institute, University of Modena and Reggio Emilia, Italy
- **March-May 2008:** Visiting Scientist at the Systems Biology and Bioinformatics group, Dept. of Computer Science, University of Rostock, Germany
- **April – May 2007**: Visiting Scientist at the Fraunhofer Chalmers Research Centre – Department of Systems Biology, Gothenburg, Sweden.
- **January 2004**- **January 2007**: PhD in Biotechnology and Molecular Medicine at the University of Modena and Reggio Emilia, Italy
- **July 2003**: "Laurea in Fisica" corresponding to B.Sc. degree in Physics and M.Sc. degree in Biophysics, obtained at University of Parma (110/110 summa cum laude), Italy
- **August 2002- June 2003:** Research activity at the Department of Biophysical Chemistry of Lund University, Sweden

AWARDS AND QUALIFICATIONS

- **September 2018:** Qualification as Full Professor of General Biochemistry in Italian universities
- **April 2017:** Qualification as Full Professor of Applied Physics/Biophysics in Italian universities
- **April 2015:** Qualification as Associate Professor of Biochemistry in Italian Universities
- **2014-2015**: Hanse-Wissenschaftskolleg (HWK) Fellowship in Neuroscience, for an 8 month-research and teaching period, Institute for Advanced Study Delmenhorst – Germany
- **December 2013:** Qualification as Associate Professor of Applied Physics/Biophysics in Italian Universities
- **2011**: Visiting Fellow (Host of the Rector), Hanse-Wissenschaftskolleg (HWK) Institute for Advanced Study Delmenhorst – Germany
- **2010**: European Science Foundation – Short Visit Grant (Lund, Sweden).
- **2009**: Alexander von Humboldt Research Fellowship for 24 month-project. Project Title: Unravelling dynamic processes in vertebrate rods phototransduction: integrating biochemical/biophysical experiments with computational modelling at a systems-level. University of Oldenburg, Germany
- **2009**: European Science Foundation – Short Visit Grant (Lund, Sweden). Project title: Mathematical model of nanoparticle-protein interaction dynamics in biological fluids and environments
- **2009:** FEBS-Short Term Fellowship (Lund, Sweden): Project Title: Ca^{2+} signalling in vision: biophysical characterization of Ca^{2+}-dependent conformational changes in the neuronal calcium sensors guanylate cyclase-activating proteins (GCAPs) and determination of the protein-ion binding constants
- **2008:** Italian Bioinformatics Society (BITS) award for the best Italian PhD thesis in Bioinformatics; international reviewing committee

GRANTS

- **2024**: Retina Italia Odv-ETS: contributo per il progetto di ricerca "Sistemi sensoriali in condizioni fisiologiche e patologiche". €12.000. Project Coordinator

- **2023**: PRIN 2022Z2PLZS (Italian Ministry for Research and Education). Heavy metals and retinal degeneration: structural and functional effects of pollutants on calcium sensor proteins regulating phototransduction. €208.591. Project Coordinator - 24 months
- **2023**: Verona Brain Research Foundation Grant (co-funding) (Meccanismi di plasticità neurale nelle degenerazioni retiniche: fattori genetici ed epigenetici esplorati mediante colture organotipiche di retina), € 12,500. Project Coordinator-12 months
- **2022**: PNRR- Next Generation EU: MNESYS:A multiscale integrated approach to the study of the nervous system in health and disease (PE6). Member of the Spoke 2 (Neuronal plasticity and connectivity). Total budget for the whole project: €149.129.400
- **2020**: Velux Stiftung Research Grant (Project 1410: Liposomes as biocompatible carriers of genes, proteins and small molecules for retinal degeneration therapy), € 310,000. Principal Investigator -36 months
- **2019**: Verona Brain Research Foundation Grant (Renewal) (Molecular design of nanovesicles for protein-replacement in retinal dystrophies therapeutics), € 10,000. Project Coordinator-12 months
- **2019**: PRIN2017 (Integrative tools for defining the molecular basis of the diseases: computational and experimental methods for protein variant interpretation), € 118,700. Coordinator of a Research Unit-36 months
- **2019**: Joint Project 2018 UniVR grant (Caratterizzazione genetica, molecolare e funzionale di nuove varianti patogeniche di GCAP1 associate a distrofie retiniche ereditarie), € 31,460. Project Coordinator- 24 months
- **2017**: Verona Brain Research Foundation Grant (Molecular design of nanovesicles for protein-replacement in retinal dystrophies therapeutics), € 10,000. Project Coordinator-12 months
- **2016:** Telethon Research Grant GGP16010 (Cone dystrophies and retinal degeneration from protein structures to biological networks. Toward the design of therapeutic molecules), € 327,666. Project Coordinator-36 months
- **2016:** Bando Ricerca di Base, Universita' di Verona. Grant UMBUSH (Understanding the molecular basis of Usher syndrome type 1J: the role of functional defects in CIB2). € 47,000. Project Coordinator-24 months
- **2015:** Italian Super Computing Resource Allocation; Grant: HP10C54GB4 (Unveiling intra- and inter-molecular communocation pathways in neuronal calcium sensor proteins by molecular dynamics simulations; 192,000 hours)
- **2015:** Italian Super Computing Resource Allocation; Grant: HP10CB7L79 (Intramolecular communication pathways in GCAP1 mutants associated with cone dystrophy unveiled by molecular dynamics simulations; 180,000 hours)
- **2014:** Italian Super Computing Resource Allocation; Grant: HP10CB736X (Setting up molecular dynamics simulations of GCAP1 mutants associated with cone and cone-rod dystrophy; 63,000 hours)
- **2009:** Blancefor Boncompagni Ludovisi Grant (Stockholm, Sweden) for support of research expenses (170,000 SEK)

RESEARCH TOPICS AND EXPERTISE

- Quantitative structure-function/structure-activity relationships of proteins and their complexes
- Network-level analysis of signal transduction pathways, especially vertebrate phototransduction
- Protein networks dynamics in normal and disease-associated conditions.
- Protein-protein and protein-ion interactions studied by experimental techniques (surface plasmon resonance, isothermal titration calorimetry, fluorescence and absorption spectroscopy, circular dichroism, dynamic light scattering)
- Biochemical and biophysical characterization of protein-nanoparticle interactions for nanomedicine applications
- Thermodynamic and kinetic analysis of protein-protein and protein-ion interactions
- Bioinformatics and computational analysis of structural properties of single proteins (Molecular Dynamics simulations), protein complexes (protein modeling and protein-protein docking simulations)) and signalling networks
- Effects of point mutations on the kinetics and thermodynamics of protein-protein interactions

INVITED LECTURES AND SEMINARS

- **2026**: Winter School "Physics of the cell, III edition", University of Trento. Invited lectures on "Physics of vision: photoreceptor cells" with tutorial an challenge-based learning session
- **2025**: II Conference on Recent Advances in Translational Eye Research 2025 (CRATER), Warsaw, Poland. Invited talk entitled: "Beyond cell death: altered mechanisms and therapy insights in a new mouse model of GUCA1A cone-rod dystrophy"

- **2025**: “Molecular networks in photoreceptors – from modeling to therapeutic design”, Invited Seminar, 06/26/2025, Ophthalmic Research Symposium, Institute for Ophthalmic Research, Tuebingen, Germany
- **2024**: Convegno Retina Italia odv, Relazione su invito intitolata: “La somministrazione di proteine ricombinanti come possibile terapia delle distrofie retiniche ereditarie: Studi preliminari”; videoconferenza
- **2024**: “Molecular networks in health and disease: a bottom-up investigation of the phototransduction cascade”, Invited Seminar, Department of Medicine, University of Perugia
- **2023**: Conference on Recent Advances in Translational Eye Research 2023 (CRATER), Warsaw, Poland. Invited talk entitled: “Recombinant protein delivery for the treatment of inherited retinal diseases”
- **2023**: Winter School “Physics of the cell, II edition”, University of Trento. Two Invited lectures entitled: 1) “Physics of vision: photoreceptor cells”; 2) “An introduction to Experimental Biophysics: absorption and emission spectroscopy”
- **2022:** “Liposomes as new tools to modulate (and correct) biochemical pathways in sensory biology”, Invited Seminar, Department of Neuroscience, University of Oldenburg, Germany
- **2022:** European Calcium Society Meeting ECS2020, Cork, Ireland. Invited talk entitled: “Retinal dystrophies associated with point mutations in guanylate cyclase activating proteins”
- **2022:** “Synergistic protein-membrane interactions optimize visual sensory transduction”, Invited Seminar, Department of Neuroscience, University of Oldenburg, Germany
- **2021**: 61mo Congresso della Societa’ Italiana di Biochimica e di Biologia Molecolare, Italy (online conference). Invited lecture entitled: “Optimizing intracellular crosstalk: the paradigmatic case of myristoylated recoverin in photoreceptors”
- **2021**: “Physiological and pathological regulation of vertebrate phototransduction: from molecules to networks”, Invited seminar, International Centre for Translational Eye Research, Warsaw, Poland.
- **2020: “**Physiological and pathological regulation of vertebrate phototransduction: from molecules to networks”, Invited seminar, SISSA, Trieste, Italy
- **2020**: Winter School “Physics of the cell”, University of Trento. Invited lecture entitled: “Physics of vision: photoreceptor cells”
- **2019**: “Physiological and pathological regulation of vertebrate phototransduction: from molecules to networks”, Invited seminar, Institut de Biologie Valrose Université Nice Côte d'Azur, Nice, France
- **2019**: PhD week 2019, University of Trieste, Institute of Medical Genetics. Invited talk entitled: “Molecular basis of retinal dystrophies: from individual proteins to networks”
- **2019**: 98th Meeting of the German Physiological Society, Ulm, Germany, invited lecture entitled: “Calcium binding proteins and the regulation of the visual sensory system: from molecules to networks”
- **2019**: Understanding human genome variations and their influence on human traits. Bioinformatics insights. Winter School UniVR - Alba di Canazei, invited lecture entitled: “Modelling genetic diseases affecting signal transduction: form single proteins to networks”
- **2018**: MAGI group conference day, San Felice del Benaco, Italy. Invited Lecture entitled: “Molecular basis of retinal dystrophies: from individual proteins to networks”
- **2018:** International Society for Eye Research Biennial meeting, Belfast, Northern Ireland, September 9 - 13. Invited lecture within the session Retina Cell Biology entitled: “Dysregulation of Second Messenger Homeostasis and Congenital Retinal Dystrophies: The Variety of GUCA1A Mutations in Photoreceptors:
- **2018:** International Symposium on Usher Syndrome, Mainz, Germany, July 19-21. Selected oral talk entitled: “A magnesium-triggered conformational change in CIB2 is impaired in Usher Syndrome type 1J”
- **2018:** “Physiological and pathological regulation of vertebrate phototransduction: a multiscale approach”. Invited seminar, School of Biomolecular & Biomedical Science, University College Dublin, Ireland
- **2017:** 59mo Congresso della Societa’ Italiana di Biochimica e di Biologia Molecolare, Caserta, Italy. Invited lecture entitled: “Phototransduction in normal and altered conditions: from molecules to networks”
- **2017:** Workshop SIB “Biologia Computazionale e di Sistema/SYSBIO: Dalle molecole alle funzioni biologiche complesse: Il metodo computazionale”, Accademia delle Scienze Bologna. Invited lecture:” Intramolecular communication pathways in a calcium sensor protein unveil allosteric regulation mechanisms”, University of Bologna, Italy
- **2016:** “Ca^{2+}/cGMP-regulation of the early steps in vertebrate vision under normal and altered conditions”, invited seminar, Dept. of Biosciences, University of Milan, Italy
- **2016:** “Phototransduction, retinal diseases and nanoparticles: a multiscale investigation from molecules to networks”, invited seminar, CIBIO, University of Trento, Italy

- **2016:** 2nd European Meeting on Phototransduction, Monte Verita' (Switzerland), 4-7 September. Invited lecture entitled: "A multiscale perspective on Ca^{2+}/cGMP homeostasis in rods under normal and altered conditions"
- **2016:** Workshop SIB "Biologia Computazionale e di Sistema/SYSBIO: Dalle molecole alle funzioni biologiche complesse: Il metodo computazionale", Accademia delle Scienze Bologna. Invited lecture: "Signaling networks in vertebrate photoreceptors in health and disease"
- **2015:** "Changing paradigms in the visual sensory world: a biophysical perspective", invited seminar, Department of Experimental Medicine (DIMES), University of Genoa, Italy
- **2015:** "Changing paradigms in the visual sensory world: a biochemical and biophysical perspective", invited seminar, Department of Biotechnology, University of Verona, Italy
- **2014:** "The regulation of Ca^{2+}/cGMP homeostasis in rod photoreceptor cells in normal and disease-associated conditions", invited seminar, Department of Neurosciences, University of Oldenburg (Germany)
- **2014:** V Jornada de Biofisica, Societat Catalana de Biologia, Barcelona, Spain. Invited plenary lecture entitled: "Changing paradigms in the visual sensory world: a biophysical perspective".
- **2014:** 13th International Meeting of the European Calcium Society, Aix-en-Provence, France. Invited lecture entitled: "Molecular aspects of the regulation of Ca^{2+}/cGMP homeostasis in rod photoreceptor cells in normal and altered conditions".
- **2013:** Scientific Kick-Off Meeting of the RTG, Molecular Basis of Sensory Biology, Hanse-Wissenschaftskolleg (HWK), Delmenhorst, Germany. Invited lecture entitled: "Changing paradigms in the (visual) sensory world".
- **2013:** 38th FEBS Congress, Saint Petersburg, Russia. Invited lecture in the session "Biochemistry of Vision". "Rhodopsin organization and phototransduction: reconciling classical and novel perspectives".
- **2013:** 18th International Conference on Calcium Binding Proteins and Calcium Function in Health and Disease, Kiruna, Sweden. Invited lecture entitled: "Dynamics of conformational transitions in calcium sensors investigated by surface plasmon resonance".
- **2012:** "Rhodopsin, transducin and dynamic scaffolding: rethinking the early steps in vertebrate vision", invited seminar, Department of Phisiology, University of Pisa, Italy
- **2011:** "Rhodopsin, transducin and dynamic scaffolding: rethinking the early steps in vertebrate vision", invited seminar, Department of Pharmacology, Vanderbilt Medical School, Nashville, USA
- **2011:** "Early molecular events in vertebrate vision: the phototransduction cascade from a systems perspective", invited seminar, Focused Meeting DYNAMO, Center for experimental Ophthalmology, Eye Clinic, University of Tuebingen, Germany
- **2011:** "Early molecular events in vertebrate vision: the phototransduction cascade from a systems perspective", invited seminar, Department of Molecular Evolution, University Pompeu Fabra, Barcelona, Spain
- **2010:** "Systems biochemistry approaches to vertebrate phototransduction: toward a molecular understanding of disease ", Systems Biochemistry- Linked Focus Meeting, York, UK
- **2009:** "Light adaptation in rod cells under normal and altered conditions: a computational network-level analysis*",* European Retina Meeting, Oldenburg, Germany
- **2008:** "Bridging the gap between systems and structural biology: protein-protein interaction as a starting point ", Dipartimento di Biologia ed Evoluzione, University of Ferrara
- **2008:** "Molecular Systems Biology approaches to phototransduction in vertebrate rods: from single photon response to light adaptation" ,XIC conference of Societa' Italiana di Biofisica Pura ed Applicata (SIBPA), Rome
- **2007:** "Computational simulations of protein-protein recognition: predicting mutational effects on the binding thermodynamics", Department of Physics, University of Parma
- **2007: "**Mutation-induced modulation of protein-protein interactions: fast computational screening of kinetic and thermodynamic effects", 5th Dulbecco Telethon Institute Scientific Retreat, Foligno
- **2007:** "Computational simulations of protein-protein recognition: predicting mutational effects on the binding thermodynamics", Department of Systems Biology – FCC Centre, Gothenburg, Sweden
- **2007:** "Computational screening of mutational effects on protein-protein and protein-DNA interactions: a fast docking-based approach", Bologna Winter School 2007 in *Bioinformatics for Systems and Synthetic Biology*, Bologna
- **2006:** "Computational screening of mutational effects on protein-protein and protein-DNA interactions: a fast docking-based approach", VI Convegno Nazionale Gruppo Interdivisionale di Chimica Computazionale, Isola di San Servolo, Venezia
- **2006:** "In Silico Screening of Mutational Effects on Enzyme- Inhibitor Affinity: a Docking-based approach.", workshop *From Computational Biophysics to Systems Biology,* Julich, Germany
- **2005:** "Fragment complementation and rigid-body docking: a combined approach to protein domain assembly", Department of Biophysical Chemistry, Lund, Sweden

ORGANIZATION OF INTERNATIONAL CONFERENCES AND MEETINGS

- **2026**: Co-organizer of the international Winter School "Physics of the cell, III edition" for undergraduate students, University of Trento, Trento, Italy
- **2024**: Organizer and chair of the Session "Functional and dysfunctional states of calcium binding proteins" at the 17th international meeting of the European Calcium Society, Cambridge, UK, from August 31-September 4, 2024
- **2023**: Co-organizer of the international Winter School "Physics of the cell" for undergraduate students, University of Trento, Trento, Italy
- **2019**: "Young Researcher Vision Camp 2019", organizer and chair of the session "Computational tools to understand the retina and its processes", Leibertingen, Germany
- **2018**: Member of the organizing Committee of the International Meeting "Proteine 2018", June 4-7, Verona, Italy
- **2018**: Member of the organizing Committee of Workshop "Sensory systems in health and disease", May 28-30, Verona, Italy
- **2016**: Organizer of the international Meeting "Neuronal Calcium Sensors in health and disease", held December, 4-7 2016 at the HWK Delmenhorst, Germany
- **2013:** Co-organizer, together with Karl-Wilhelm Koch, of the European Meeting on Phototransduction, held June 19-22, 2013 at the HWK Delmenhorst, Germany
- **2013:** International organizing Committee, 8th International Conference on Calcium Binding Proteins and Calcium Function in Health and Disease 30 June – 4 July, 2013 in Kiruna, Sweden

REFEERING

Referee for the following Peer-review journals:

- *ACS Chemical Neuroscience, ACS Nano, Analytical Methods, BBA-Proteins and Proteomics, BBA-Biomembranes, Biomolecules, BBA-Molecular and Cellular Research, Biochemistry, Biochemical Journal, BioMacromolecules, Biomaterials, Biomolecules, BioSystems, Chemical Society Reviews, Cellular and Molecular Life Sciences, Experimental Eye Research, Frontiers in Molecular Neuroscience, Integrative Biology, Journal of the American Chemical Society, Journal of Controlled Release, Journal of Physical Chemistry B, Molecular BioSystems, Molecular Vision, Nature Communications, New Journal of Chemistry, Nucleic Acids Research, Physical Chemistry Chemical Physics, PLoS Biology, PLoS Computational Biology, PLoS One, Scientific Reports, The Chemical Record*

SCIENTIFIC EVALUATION PANELS

- **From 2026**: Reviewer for research proposals received by the Foundation La Caixa, Spain and Portugal
- **From 2025**: Member of the Scientific Panel for the ISCRA and LISA initiatives (CINECA)
- **2025**: Evaluator for the Aalborg University's research talent programme, AAU Excellence
- **From 2024**: Reviewer for research proposals received by the National Science Center, Poland.
- **From 2019**: Reviewer for proposals for the Engineering and Physical Sciences Research Council (EPSRC), UK
- **From 2015**: International Evaluator of proposals within the EURIAS Program for Fellowships in Institutes of Advanced Study (Neuroscience, Physical and Biological Sciences)
- **From 2012***:* International evaluator for the project proposals for the Romanian National Council for Scientific Research

MEMBERSHIP

- **2024-present:** Member of the Italian Society for Pure and Applied Biophysics (SIBPA)
- **2019-present**: Member of the Protein Society
- **2014-present**: Member of the European Calcium Society
- **2009-present**: Member of the Italian Society of Biochemistry and Molecular Biology (SIB)
- **2010-2014**: Member of the Biochemical Society (UK)
- **2008-2013**: Member of the Bioinformatics Italian Society (BITS)

EDITORIAL BOARDS MEMBERSHIP

- **2024-present**: Associate Editor, Frontiers in Molecular Biosciences – section on Molecular Diagnostics and Therapeutics
- **2022-present**: Associate Editor, Frontiers in Molecular Biosciences – section on Molecular Recognition
- **2019-present**: Topic Editor, International Journal of Molecular Sciences
- **2018-present**: Associate Editor, Frontiers in Molecular Neurosciencs

- **2018-present**: Review Editor, Frontiers in Molecular Biosciences
- **2015-2018:** Review Editor, Frontiers in Molecular Neurosciencs
- **2010-2015:** Member of the editorial Board for the Journal of Nanomedicine and Biotherapeutic Discovery

PUBLICATIONS AND CONTRIBUTIONS

Starting from 2005, Dr. Dell'Orco has authored approximately 100 articles appeared in international peer-reviewed journals. He has also co-authored two book chapters. To date his **H-index** is **32** (source: Google Scholar).

Peer-reviewed articles (Underlined: corresponding author):

1. Dal Cortivo G, Longo C, Müller B, Avesani A, Pacchiana R, Weller M, Marino V, Lytvynchuk L, Stieger K, **Dell'Orco D**. Protein delivery to the eye: assessing therapeutic potential across inner and outer retina. *Int J Pharm*. **2026**;690:126568. doi: 10.1016/j.ijpharm.2026.126568.

2. Zamboni D, Marino V, Avesani A, Dal Cortivo G, Lattanzi G, **Dell'Orco D**. Altered Pore Composition and Flexibility in a Deafness-Associated TMC1 Variant: Insights from Molecular Dynamics Simulations. *ACS Chem Neurosci*. **2025**;16(24):4602-4612. doi: 10.1021/acschemneuro.5c00546..

3. Turina P, Dal Cortivo G, Enriquez Sandoval CA, Alexov E, Ascher DB, Babbi G, Bakolitsa C, Casadio R, Fariselli P, Folkman L, Kamandula A, Katsonis P, Li D, Lichtarge O, Martelli PL, Panday SK, Pires DEV, Portelli S, Pucci F, Rodrigues CHM, Rooman M, Savojardo C, Schwersensky M, Shen Y, Strokach AV, Sun Y, Woo J, Radivojac P, Brenner SE, **Dell'Orco D**, Capriotti E. Assessing the predicted impact of single amino acid substitutions in calmodulin for CAGI6 challenges. *Hum Genet.* **2024** Dec 23. doi: 10.1007/s00439-024-02720-y.

4. Bodenbender JP, Marino V, Philipp J, Tropitzsch A, Kernstock C, Stingl K, Kempf M, Haack TB, Zuleger T, Mazzola P, Kohl S, Weisschuh N, **Dell'Orco D**, Kühlewein L. Comprehensive analysis of two hotspot codons in the TUBB4B gene and associated phenotypes. *Sci Rep.* **2024**;14(1):10551. doi: 10.1038/s41598-024-61019-0.

5. Olivieri G, Dal Cortivo G, Del Conte R, Zanzoni S, Marino V, **Dell'Orco D**, Cantini F. Structural dynamics of calcium and integrin-binding protein 2 (CIB2) reveal uncommon flexibility and heterogeneous calcium and magnesium loading. *Int J Biol Macromol.* **2025** Jan;286:138003. doi: 10.1016/j.ijbiomac.2024.138003. Epub 2024 Nov 23. Erratum in: Int J Biol Macromol. 2025 Feb 12;304(Pt 2):140730.

6. Biasi A, Marino V, Dal Cortivo G, **Dell'Orco D**. Supramolecular complexes of GCAP1: implications for inherited retinal dystrophies. *Int J Biol Macromol*. **2024** Nov;279(Pt 1):135068. doi: 10.1016/j.ijbiomac.2024.135068.

7. Marino V, Phromkrasae W, Bertacchi M, Cassini P, Chakrabandhu K, **Dell'Orco D**, Studer M. Disrupted protein interaction dynamics in a genetic neurodevelopmental disorder revealed by structural bioinformatics and genetic code expansion*. Protein Sci.* **2024**;33(4):e4953.

8. Sanavia T, Turina P, Morante S, Consalvi V, Lesk AM, Bakolitsa C, **Dell'Orco D**. Editorial: Computational and experimental protein variant interpretation in the era of precision medicine. *Front Mol Biosci.* **2024**;11:1363813.

9. Dal Cortivo G, Marino V, Zamboni D, **Dell'Orco D.** Impact of calmodulin missense variants associated with congenital arrhythmia on the thermal stability and the degree of unfolding. *Hum Genet*. **2023** Dec 28. doi: 10.1007/s00439-023-02629-y.

10. Kleinfelder K, Lotti V, Eramo A, Amato F, Lo Cicero S, Castelli G, Spadaro F, Farinazzo A, **Dell'Orco D**, Preato S, Conti J, Rodella L, Tomba F, Cerofolini A, Baldisseri E, Bertini M, Volpi S, Villella VR, Esposito S, Zollo I, Castaldo G, Laudanna C, Sorsher EJ, Hong J, Joshi D, Cutting G, Lucarelli M, Melotti P, Sorio C. In silico analysis and theratyping of an ultra-rare CFTR genotype (W57G/A234D) in primary human rectal and nasal epithelial cells. *iScience*. **2023**;26(11):108180.

11. Asteriti S, Marino V, Avesani A, Biasi A, Dal Cortivo G, Cangiano L, **Dell'Orco D**. Recombinant protein delivery enables modulation of the phototransduction cascade in mouse retina. *Cell Mol Life Sci.* **2023**;80(12):371.

12. Marino V, Dal Cortivo G, **Dell'Orco D**. Ionic displacement of Ca^{2+} by Pb^{2+} in calmodulin is affected by arrhythmia-associated mutations. *Biochim Biophys Acta Mol Cell Res*. **2023** Aug;1870(6):119490.

13. Bodenbender JP, Marino V, Bethge L, Stingl K, Haack TB, Biskup S, Kohl S, Kühlewein L, **Dell'Orco D**, Weisschuh N. Biallelic Variants in TULP1 Are Associated with Heterogeneous Phenotypes of Retinal Dystrophy. *Int J Mol Sci.* **2023** Jan 31;24(3):2709.

14. Dal Cortivo G, Marino V, Bianconi S, **Dell'Orco D**. Calmodulin variants associated with congenital arrhythmia impair selectivity for ryanodine receptors. *Front Mol Biosci.* **2023** Jan 5;9:1100992.

15. Dal Cortivo G, **Dell'Orco D**. Calcium- and Integrin-Binding Protein 2 (CIB2) in Physiology and Disease: Bright and Dark Sides. *Int. J. Mol. Sci.* **2022**, 23, 3552.

16. Avesani A, Bielefeld L, Weisschuh N, Marino V, Mazzola P, Stingl K, Haack TB, Koch KW, **Dell'Orco D**. Molecular Properties of Human Guanylate Cyclase-Activating Protein 3 (GCAP3) and Its Possible Association with Retinitis Pigmentosa. *Int J Mol Sci.* **2022** Mar 17;23(6):3240.

17. Dal Cortivo G, Barracchia CG, Marino V, D'Onofrio M, **Dell'Orco D**. Alterations in calmodulin-cardiac ryanodine receptor molecular recognition in congenital arrhythmias. *Cell. Mol. Life Sci.* 79, 127, **2022**

18. Weisschuh N, Marino V, Schäferhoff K, Richter P, Park J, Haack TB, **Dell'Orco D.** Mutations at a split codon in the GTPase-encoding domain of OPA1 cause dominant optic atrophy through different molecular mechanisms. *Hum Mol Genet.* **2022** Mar 3;31(5):761-774. doi: 10.1093/hmg/ddab286.

19. Longo R, Avesani A, Dalla Mura G, **Dell'Orco D**, Manfredini S, Panozzo G. Clinical improvement of ocular surface parameters in dry eye patients following treatment with urea/crosslinked-hyaluronate eyedrops correlates with the secretion of MUC-4. *Expert Review of Ophthalmology*. (**2021**) DOI: 10.1080/17469899.2021.1999808

20. Tesolin P, Fiorino S, Lenarduzzi S, Rubinato E, Cattaruzzi E, Ammar L, Castro V, Orzan E, Granata C, Dell'Orco D, Morgan A, Girotto G. Pendred Syndrome, or Not Pendred Syndrome? That Is the Question. Genes (Basel). 2021 Oct 1;12(10):1569. Tesolin P, Fiorino S, Lenarduzzi S, Rubinato E, Cattaruzzi E, Ammar L, Castro V, Orzan E, Granata C, **Dell'Orco D,** Morgan A, Girotto G. Pendred Syndrome, or Not Pendred Syndrome? That Is the Question. *Genes (Basel).* **2021** Oct 1;12(10):1569.

21. Biasi A, Marino V, Dal Cortivo G, Maltese PE, Modarelli AM, Bertelli M, Colombo L, **Dell'Orco D**. A Novel GUCA1A Variant Associated with Cone Dystrophy Alters cGMP Signaling in Photoreceptors by Strongly Interacting with and Hyperactivating Retinal Guanylate Cyclase. *Int J Mol Sci.* **2021** Oct 6;22(19):10809.

22. **Dell'Orco D**, Koch KW, Rispoli G. Where vision begins. *Pflugers Arch.* **2021** Jul 10:1-5. doi: 10.1007/s00424-021-02605-3.

23. Beelen CJ, Asteriti S, Cangiano L, Koch KW, **Dell'Orco D**. A hybrid stochastic/deterministic model of single photon response and light adaptation in mouse rods. *Comput Struct Biotechnol J*. **2021**, 202,1 Volume 19, 2021, Pages 3720-3734.

24. Marino V, Dal Cortivo G, Maltese PE, Placidi G, De Siena E, Falsini B, Bertelli M, **Dell'Orco D**. Impaired Ca2+ Sensitivity of a Novel GCAP1 Variant Causes Cone Dystrophy and Leads to Abnormal Synaptic Transmission Between Photoreceptors and Bipolar Cells. *Int J Mol Sci.* **2021**;22(8):4030. doi: 10.3390/ijms22084030.

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(January 21, 2026)