

Matteo De March

Italian, English

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CURRENT POSITION**- Research assistant at UNG University of Nova Gorica.**

Molecular Biology, Biochemistry, Molecular Immunology, Structural Biology. Teaching and Tutoring.

- Professional Counselor and Member of Professional FAIP counselling.

Psychology, Gestalt counselling, Education.

PREVIOUS APPOINTMENTS**- Professor at High School Trieste (Nov 2020-Feb 2021).**

- **Research assistant at University of Trieste (Nov 2019-Nov 2020).** Molecular Biology, Biochemistry, Structural Biology, Biophysics, Synchrotron Physics.

- **Junior Lecturer in Structural Biology course (2017-2020).** Master degree in Functional Genomics (University of Trieste).

- **Researcher at ELETTRA, Structural Biology Laboratory (2012-2019).** Molecular Biology, Biochemistry, Structural Biology, Pharmaceutical Chemistry, Chemistry, Biophysics, Synchrotron Physics.

- **Research assistant at University of Trieste, Department of Chemical Sciences (2011–2012).** Molecular Biology, Biochemistry, Structural Biology, Pharmaceutical Chemistry, Chemistry, Synchrotron Physics.

EDUCATION

- **PhD in Chemical and Pharmaceutical Sciences (April 2011).** University of Trieste, Department of Chemical Sciences. Molecular Biology, Biochemistry, Structural Biology, Pharmaceutical Chemistry, Chemistry.

- **Master of Science in Biology - Functional Genomics (September 2007).** University of Trieste, Department of Chemical Sciences.

AWARDS

- 2008-2009. from C.I.R.C.M.S.B. Bari.
- 2009-2010: from Regione Autonoma FVG.
- 2010-2012: from University Federico II Naples.

PUBLICATIONS

1. Ullah R, Shehzad A, Shah MA, **De March M**, Ismat F, Iqbal M, Onesti S, Rahman M, McPherson MJ. C- Terminal Domain of the Human Zinc Transporter hZnT8 Is Structurally Indistinguishable from Its Disease Risk Variant (R325W). *Int J Mol Sci.* 2020 21(3).
2. Lazzari E, El-Halawany M, **De March M**, Valentino F, Cantatore F, Migliore C, Onesti S, Meroni G. Analysis of the Zn-binding domains of TRIM32, the E3 ubiquitin ligase mutated in Limb Girdle Muscular Dystrophy 2H. *Cells*, 2019.
3. **De March M**, Barrera-Vilarmau S, Crespan E, Mentegari E, Merino N., Gonzalez-Magana A., Romano- Moreno M, Maga G, Crehuet R, Onesti S, Blanco FJ, De Biasio A. p15PAF binding to PCNA modulates the DNA sliding surface. *Nucleic Acids Res.* 2018, 46, 9816-9828.
4. Napolitano LMR, Marchesi A, Rodriguez A, **De March M**, Onesti S, Laio A, Torre V. The permeation mechanism of organic cations through a CNG mimic channel. *PLoS Comput. Biol.* 2018, 14, e1006295.
5. Ali Shah M, Ullah R, **De March M**, Salahuddin Shaha M, Ismata F, Habib M, Iqbala M, Onesti S, Rahman M. Overexpression and characterization of the 100K protein of Fowl adenovirus-4 as an antiviral target. *Virus Research*, 2017. [Epub ahead of print]
6. **De March M**, De Biasio A. The dark side of the ring: role of the DNA sliding surface of PCNA. *Crit Rev Biochem Mol Biol.* 2017, 663-673.
7. **De March M**, Carroni M, Medagli B, Krastanova I, Taylor IA, Amenitsch H, Araki H, Pisani FM, Patwardhan A, Onesti S. New insights into the GINS complex explain the controversy between existing structural models. *Sci Rep.* 2017, 7, 40188.
8. **De March M**, Merino N, Barrera-Vilarmau S, Crehuet R, Onesti S, Blanco FJ, De Biasio A. Structural basis of human PCNA sliding on DNA. *Nat Commun.* 2017, 8, 13935.
9. Mojumdar A, **De March M**, Marino F, Onesti S. The Human RecQ4 Helicase Contains a Functional RecQ C- terminal Region (RQC) That Is Essential for Activity. *J Biol Chem.* 2017, 292, 4176-4184.
10. **De March M**, Brancatelli G, Demitri N, De Zorzi R, Hickey N, Geremia S. A general exit strategy of monoheme cytochromes c and c2 in electron transfer complexes? *IUBMB Life.* 2015, 67, 694-700.
11. Napolitano LM, Bisha I, **De March M**, Marchesi A, Arcangeletti M, Demitri N, Mazzolini M, Rodriguez A, Magistrato A, Onesti S, Laio A, Torre V. A structural, functional, and computational analysis suggests pore flexibility as the base for the poor selectivity of CNG channels. *Proc Natl Acad Sci U S A.* 2015, 112, E3619- 28.
12. Benedetti F, Berti F, Campaner P, Fanfoni L, Demitri N, Olajuyigbe FM, **De March M**, Geremia S. Impact of Stereochemistry on Ligand Binding: X-ray Crystallographic Analysis of an Epoxide-Based HIV Protease Inhibitor. *ACS Med Chem Lett.* 2014, 5, 968-72.

13. **De March M**, Demitri N, De Zorzi R, Casini A, Gabbiani C, Guerri A, Messori L, Geremia S. Nitrate as a probe of cytochrome c surface: crystallographic identification of crucial "hot spots" for protein-protein recognition. Impact of Stereochemistry on Ligand Binding: X-ray Crystallographic Analysis of an Epoxide- Based HIV Protease Inhibitor. *J Inorg Biochem.* 2014, 135, 58-67.

14. **De March M**, Di Rocco G, Hickey N, Geremia S. High-resolution crystal structure of the recombinant diheme cytochrome c from *Shewanella baltica* (OS155). *J Biomol Struct Dyn.* 2015, 33, 395-403.

15. **De March M**, Demitri N, Geremia S, Hickey N, Randaccio L. Trans and cis influences and effects in cobalamins and in their simple models. *J Inorg Biochem.* 2012, 116, 215-27.

SELECTED SCHOOL AND CONFERENCES

- "Recent Advances in Macromolecular Crystallography Workshop". Copanello di Staletti, 23-28 September 2007. **Selected Talk**

- "8° Workshop on Pharmaco Bio-metallics". Ravenna, 24-26 October 2008. **Selected Talk**

- "Synchrotron radiation techniques and nanotechnologies: a synergic approach to life sciences and medicine". ICTP Advanced School, iThembaLab - CapeTown, South Africa. 11-21 November 2013. **Tutor in protein crystallography**

- "Advance school of synchrotron radiation to visualize macromolecules". ICTP Trieste, 15-20 December 2014. **Lecturer in protein crystallography**

- "5th NEURON TECHNOLOGY SUMMER SCHOOL". SISSA Trieste, 8-19 June 2015. **Lecturer in protein crystallography**

- "XLIV Annual Meeting of the AIC". Vercelli, September 14-18, 2015. **Selected Talk**

- "Synchrotron radiation in chemistry and life sciences" University of Padua, DSV. June 17 2016. **Invited Lecturer**

- "Molecular biophysics" University of Florence. March 15 2018. **Invited Lecturer**

- "School on synchrotron radiation". Graz University of Technology. Elettra Trieste. 18-21 June 2018. **Lecturer and tutor in protein crystallography**

SKILLS

Molecular biology & Biochemistry

DNA manipulation. Expression of recombinant proteins. Protein purification and refolding. Chromatographic techniques (HPLC and FPLC). Protein characterization: SDS-page, acetic acid-urea, fluorescence and absorption spectroscopy, CD, ThermoFluor. Mass Spectrometry. Biophysical assays.

Structural Biology

Crystallization, co-crystallization and soaking; automated high-throughput screenings and visualization (Tecan, Mosquito, Hydrall and XtalFocus). Data collection in-house (Bruker Nonius-CCD) and with synchrotron radiation sources (Elettra, ESRF, DIAMOND, Soleil, Petralia). Cryogenic and dehydration systems. Data processing (Mosflm, XDS, HKL2000, CCP4i suite, Wingx). Phase determination (CCP4i suite, ShellX suite, Phenix suite and AutoRickShaw). Modeling & refinement (CCP4i suite, Phenix suite and Coot). SAXS applied to proteins from sample preparation/manipulation to the data collection using synchrotron radiation (Elettra, ESRF and Soleil), data reduction & interpretation (IgorPro, ATSAS suite). Molecular Graphics (Pymol).

Bioinformatics/Informatics

Databases, Sequence/structure alignments, Homology prediction/modelling, Modeling & MD/Docking. Windows, OS X, Unix/Linux platforms.

REFERENCES

Silvano Geremia. University of Trieste. sgeremia@units.it

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Heinz Amenitsch. Graz University of Technology. Heinz.amenitsch@elettra.eu