

PERSONAL INFORMATION **Tania Vanzolini**



RESEARCH INTERESTS

- Protein engineering, expression, purification, and characterization with special interest in antimicrobial agents.
- Development of drug delivery systems especially targeted systems using antibodies in different format as fusion partners.

WORKING EXPERIENCE

02/2022 – Now

**Research fellow**

University of Urbino Carlo Bo, Urbino, Italy

Research projects:

- Production and characterization of a biopolymer made of a single-cysteine mutated phaseolin for the production of bioplastic, biocompatible scaffolds and functionalized nanoparticles.
  - Development of targeted therapeutic, diagnostic and theragnostic antifungal agents through the production of immunoliposomes and immuno-erythrocyte vesicles functionalized with H5K1 antibody.
- Supervisors: Professor Rita Crinelli and Mauro Magnani

11/2018 – 12/2021

**Doctoral research**

University of Urbino Carlo Bo, Urbino, Italy

Research project: Humanization, development, production and characterization of anti- $\beta$ -1,3-glucans antibodies in full-length, scFv and diabody formats for the treatment of fungal infections.

Supervisor: Professor Mauro Magnani.

05/2021 – 10/2021

**Visiting Ph.D. student**

Azienda Ospedaliero Universitaria – Ospedali Riuniti di Ancona, Torrette Hospital, Infectious Diseases Ward, Ancona, Italy.

Research project: Evaluation of the activity of the humanized monoclonal antibody H5K1 on clinical isolates of *C. glabrata* with low susceptibility to commercially available antifungal drugs.

Supervisor: Professor Francesco Barchiesi.

03/2019

**Visiting Ph.D. student**

Diatheva Srl., Via Sant'Anna 131/135, 61030 Cartoceto, Italy

Aim: Learning the expression and purification techniques to produce a humanized scFv derived from the murine monoclonal antibody 2G8 and active against pathogenic fungi.

Supervisor: Professor Mauro Magnani Co-supervisor: Tomas di Mambro Ph.D.

09/2017 – 03/2018

**Visiting student**

The University of Hong Kong (HKU), Hong Kong

Research project (Master's Degree Thesis): PK1, PK2 and KL4 peptides as siRNA delivery vectors *in vitro* and *ex vivo* in reversible permeabilized tissue.

Supervisor: Professor Jenny K.W. Lam.

## EDUCATION

11/2018 – 12/2021

**Doctor's degree in Biomolecular and Health Sciences - with Merit**

University of Urbino Carlo Bo, Urbino, Italy  
 Innovative Industrial Ph.D. - Scholarship founded by Marche Region  
 Thesis Title: Development of new biological drugs for the treatment of fungal infections.  
 Supervisor: Professor Mauro Magnani.

12/2018

**Professional Qualification in Pharmacy**

University of Urbino Carlo Bo, Urbino, Italy

09/2013 – 10/2018

**Master's Degree in Pharmaceutical Chemistry and Technology - 110/110 with Merit**

University of Urbino Carlo Bo, Urbino, Italy  
 Thesis Title: PK1, PK2 and KL4 peptides as siRNA delivery vectors in vitro and ex vivo in reversible permeabilized tissue.  
 Research project conducted in The University of Hong Kong (HKU), Hong Kong.  
 Supervisor: Professor Luca Casettari, Co-Supervisor: Professor Jenny K.W. Lam.

## COMPETENZE PERSONALI

Language (Native) Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B2	B2	B2
Trinity College London + Manhattan College and Olin College					
French	B2	B2	B2	B2	B2
Delf					
German	A2/B1	A2/B1	A2/B1	A2/B1	A2/B1
Did-Deutsch in Deutschland					
Chinese (Mandarin)	A2	A2	A2	A2	A2
孔子课堂 Aula Confucio					

Job-related skills

- Protein engineering: cDNA cloning and recombinant expression in bacteria.
- Protein purification: FPLC (i.e. Affinity chromatography, Ion exchange chromatography).
- Protein expression and characterization: SDS PAGE, western blotting, ELISA, *in vitro* activity.
- Cell competences: culture of mammalian, bacterial and yeast cells, transfection of mammalian cells, tissue permeabilization, bacterial competence, transformation of bacteria, extraction of yeast cell wall components
- Microscopy: immunofluorescence.
- Microbiological analyses: growth inhibition, adhesion inhibition, phagocytosis assay, MIC assay, checkerboard assay, FIC and FIC<sub>i</sub> calculations, evaluation of synergy/additivity/indifference/antagonism between two compounds, MFC/MBC, time-kill curves, biofilm assays (polysaccharide content of the biofilm, disruption and inhibition of the formation of the biofilm evaluated through the metabolic activity and the biomass).

- Digital competence
- Data statistical analysis: GraphPad Prism
  - Softwares: Microsoft Office, Adobe Illustrator, ImageJ

## PROFESSIONAL INFORMATION

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Patent Mauro Magnani, Tomas Di Mambro, **Tania Vanzolini**. **Humanized antibodies against pathogenic fungi** (IT10202000026398, PCT/EP2021/080372). Submitted. Come scrivere un CV di successo, New Associated Publisher, Londra, 2002.

Publications Menotta M, **Vanzolini T**, Magnani M. **AFM evaluation of a humanized recombinant antibody affecting *C. auris* cell wall and stability**. To be submitted (Authors order and title could be modified).

**Vanzolini T**, Fioriti S, Morroni G, Magnani M, Barchiesi F. **hmAb H5K1 is effective against clinical isolates of *C. glabrata***. To be submitted (Authors order and title could be modified).

Bruschi M\*, Vanzolini T\*, Sahu N, Magnani M, Fratemale A. **Functionalized 3D scaffolds for engineering the hematopoietic niche**. Submitted (\* co-first authors).

Di Mambro T\*, **Vanzolini T\***, Bianchi M, Crinelli R, Canonico B, Tasini F, Menotta M and Magnani M. **Development and preliminary characterization of a humanized scFv for fungal infections**. Submitted (\* co-first authors).

**Vanzolini T\***, Bruschi M\*, Rinaldi AC, Magnani M, Fratemale A. **Multitalented Synthetic Antimicrobial Peptides and Their Antibacterial, Antifungal and Antiviral Mechanisms**. Int J Mol Sci. 2022 Jan 4;23(1):545. <https://doi.org/10.3390/ijms23010545> (\* co-first authors).

Di Mambro, T.\*, **Vanzolini, T.\***, Bruscolini, P., Perez-Gaviro, S., Marra, E., Roscilli, G., Bianchi, M., Fratemale, A., Schiavano, G.F., Canonico, B., Magnani, M., 2021. **A new humanized antibody is effective against pathogenic fungi *in vitro***. Sci Rep 11, 19500. <https://doi.org/10.1038/s41598-021-98659-5> (\* co-first authors).

Mehta, S., Ghezzi, D., Catalani, A., **Vanzolini, T.**, Ghezzi, P., 2021. **Online information on face masks: analysis of websites in Italian and English returned by different search engines**. BMJ Open 11, e046364. <https://doi.org/10.1136/bmjopen-2020-046364>

Ghezzi, P., Bannister, P.G., Casino, G., Catalani, A., Goldman, M., Morley, J., Neunez, M., Prados-Bo, A., Smeesters, P.R., Taddeo, M., **Vanzolini, T.**, Floridi, L., 2020. **Online Information of Vaccines: Information Quality, Not Only Privacy, Is an Ethical Responsibility of Search Engines**. Frontiers in Medicine 7, 400. <https://doi.org/10.3389/fmed.2020.00400>

Conference and workshop participation

### Oral presentation

Trends in Biotechnology: the SIB group perspectives.  
Naples (NA), Italy, 23/06-24/06/2022

Development of new biological drugs for the treatment of fungal infections

National meeting 'A. Castellani' of PhD students in biochemical sciences, The Brallo meeting.  
Brallo di Pregola (PV), Italy, 13/09 – 16/09/2021

*In vitro* activity of Dia-T51, the new humanized monoclonal antibody against  $\beta$ -1,3-glucans of pathogenic fungi.

**Poster**

Immunotherapy for Infectious Diseases Conference.

*Pavia (PV), Italy, 20/06-23/06/2022*

**Tania Vanzolini**, Tomas Di Mambro, Emanuele Marra, Giuseppe Roscilli, Gianluca Morroni, Simona Fioriti, Francesco Barchiesi and Mauro Magnani. Development of new biological drugs for the treatment of fungal infections.

ISHAM Asia 2021.

*Online, 06/08 – 08/08/2021*

Tomas Di Mambro, **Tania Vanzolini**, Emanuele Marra, Giuseppe Roscilli, Gianluca Morroni. *In vitro* activity of Dia-T51 a new humanized monoclonal antibody against  $\beta$  1,3-glucans of pathogenic fungi. –

- Awards “Guido Paolucci” award for young talents by BCC Gradara Bank. 2008  
Honour of master thesis publication. 2008  
“Studenti Meritevoli” award for the academic career by University of Urbino Carlo Bo. 2018

**ADDITIONAL INFORMATION**

Other experiences and competences

Volunteering at Nanogagliato: nanoscience festival, Gagliato (CZ) (<https://accademiadigagliato.org/nanogagliato/>) and Nanovalbruna – Science partnering with Nature, Valbruna (UD) (<https://nanovalbruna.com/>) events organized by Accademia Globale delle Nanoscienze di Gagliato, Mauro Ferrari, Paola Del Zotto Ferrari and Annalisa Chirico. *From 2019.*

Violin student in Creobisce Music School, Gabicce Mare, Italy. *From 2019*

Driving licence B

Personal Data Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 “Codice in materia di protezione dei dati personali”.