

CV

Name: Franca

Surname: Rossi

EDUCATION

1992 – University degree (110/110 cum laude) in Biological Sciences at the University of Pavia (Italy).

1993 – 1997 - Post-graduate research activity in the field of HIV-1 and HBV molecular biology (fellowships granted by the Italian CNR and ISTISAN), at the “IGBE-Istituto di Genetica Biochimica ed Evoluzionistica” of the CNR (Pavia, Italy) (Supervisors: Prof. G. Milanesi, Prof. A. Gallina).

1997 – 2000 Research fellow at the Unit U526 "Activation des Cellules Hématopoïétiques", at the School of Medicine "Pasteur", Nice (France) (fellowships granted by the Italian ISTISAN and by the French INSERM) (Supervisor: Dott. J-F. Peyron).

2001 - Research fellow (assegnista) at the Biochemistry and Biocrystallography Unit of the Department of Pharmaceutical Sciences (DSF), University of Piemonte Orientale (Novara, Italy)

2002-2022: Researcher (Ricercatore Universitario) at the Biochemistry and Biocrystallography Unit of DSF, University of Piemonte Orientale (Novara, Italy).

Since Nov. 2022: Associate professor in Biochemistry at UPO-DSF.

MAIN RESEARCH FIELD

Biochemical and Structural Biology based analyses of the structure/function relationship in macromolecules and macromolecular complexes.

RESEARCH TOPICS

1. Biochemical/structural analysis of **a)** enzymes that regulate tryptophan metabolism in humans and in *Anopheles gambiae*, the main Malaria vector in human populations, and **b)** cytosolic sulfotransferases (SULTs) of mosquito species. In both cases, the determination of the 3D structure of such enzymes and the development of assays adaptable to high-throughput analysis of natural and synthetic small-molecule libraries and/or structure-based rationally designed compounds, constitute the basis for the identification of selective and species-specific inhibitors of the mosquito's molecular targets.

2. Analysis of DNA repair mechanisms in *Mycobacterium tuberculosis* (Mtb).

By exploiting experimental approaches that combine complementary biochemical and biophysical techniques, the research aims at: **a)** the structural and functional characterization of individual enzymes responsible for damaged DNA repair in Mtb; and **b)** the identification and analysis of macromolecular complexes that control Mtb genomic stability and/or participate in the coordination of DNA repair with other vital aspects of pathogen biology.

Publications - 40 full papers and several contributions to national and international meetings.

Expertise - Recombinant DNA techniques; recombinant protein expression in and purification from bacteria, yeast, insect and mammalian cell lines; protein/enzyme characterisation; site-directed mutagenesis; protein-protein and protein-DNA interaction analysis (*in vitro* biochemical and biophysical approach); X-rays crystallography; regular access at European Synchrotron facilities.