# Cristina Bottino

Full professor

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## Education and training

1985
### Medical Doctor (M.D.) degree
110/110 cum laude
School of Medicine University of Genova - Genova - IT

2015
### Healthcare Management Degree
Development of a diagnostic-therapeutic-care way for the identification of T and NK cytotoxic related primary immunodeficiencies
Accademia Management Sanitario (AMAS) University of Genova - Genova - IT

## Academic experience

2006 - ONGOING
### Full Professor
Dip. Exp.MedicineSchool of Medicine University of Genova - Genova - IT

## Work experience

1986 - 1988
### Postdoctoral Fellow Laboratory of Human Immunology
Ludwig Institute for Cancer research - Lausanne - CH

1989 - 2001
### Staff Member Laboratory of Immunology
Istituto Nazionale per la Ricerca sul Cancro (IST) - Genova - IT

2001 - 2006
### Staff Member Laboratory of Clinical and Experimental Immunology
IRCCS Istituto G. Gaslini - Genova - IT
Head Molecular Immunology Unit

2006 - ONGOING
### Head of the Laboratory of Clinical and Experimental Immunology
IRCCS Istituto G. Gaslini - Genova - IT

## Language skills

| Italian | English | French |
|---|---|---|
| Mother tongue | Independent | Independent |

## Teaching activity

Physiopathology, Medical School
Pathology, Dental School
Pathology and Physiopathology, Physiotherapy school

## Postgraduate research and teaching activity

### Supervision of PhD students, residents and post-doctoral fellows

Supervisor of doctoral students (Clinical and Experimental Immunology doctoral school, University of Genova), specialization students (Clinical Pathology specialization school, University of Genova) and fellowships

### PhD committees membership

Member of the 'Clinical and Experimental Immunology' doctoral school, University of Genova

### Postgraduate (PhD) teaching activity

Professor of the 'Clinical and experimental Immunology' doctoral school and Clinical Pathology specialization school, University of Genova

## Research interests

The Cristina Bottino's research activity is focused on the analysis of the molecular mechanisms regulating the immune mediated recognition of tumors and virus-infected cells in human. Since 1990 a major object of her research has been the study of the function of Natural Killer cells (NK) in physiological and pathological conditions such as tumors and primary immunodeficiencies (PID) .
1) Discovery and molecular characterization of the HLA-class I-specific inhibitory receptors (iKIR, CD94/NKG2A) and their activating counterparts (aKIR, CD94/NKG2C); 2) identification of the (non-MHC specific) activating NK receptors and co-receptors NKp46, NKp30, NKp44, 2B4, NKp80 and NTB-A; 3) Identification of PVR and Nectin-2, ligands of DNAM-1 activating receptor; 4) demonstration that of NTB-A displays homophilic recognition; 5) Characterization of the NK cell function patients with XLP1, LAD1 and FHL immunodeficiencies ; 6) analysis of the molecular interactions involved in NK/DC and NK/macrophage crosstalk in physiological conditions and in the tumor microenvironment; 7) demonstration that NK cells are able to kill tumor cells with stem cell properties (CSC) as well as the tumor-associated endothelium.

Since 2003 she focused her research on high-risk Neuroblastoma (NB). She characterized the receptor/ligand interactions involved in the NK cells-mediated recognition of NB and identifyed different tumor escape mechanisms. In particular, she identified B7-H3, a novel immune checkpoint ligand protecting NB from NK-mediated recognition. Moreover, she demonstrated that: i) in a percentage of NB patients tumor cells downregulate the expression of PVR escaping NK cell-mediated killing; ii) NB cells release TGF-β1 that modulates in NK cells the repertoire of activating and chemokine receptors ; iii) NB cells express/upregulate the immune checkpoint ligand PD-L1 that interacting with the PD-1 limits immune surveillance ; iv) NB patients may benefits from treatment with Tyrosine kinase inhibitors (TKIs) such as Imatinib mesylate that exert off-Target effects on NK, Monocytes, and M2 Macrophages

## *Other professional activities*

Head of the Laboratory of Clinical and Experimental Immunology, IRCCS Istituto G. Gaslini, Genova, Italy
Member of REPRISE (MIUR), Basic Research
Scientific Advisory Board Member of the the biotech start-up React4life (https://www.react4life.com)