

Laboratory

The main areas of laboratory diagnostics are divided into two branches:

1. **Basic General Diagnostics**, which includes the following activities and analytical lines:
 - **Core Lab Area:** General clinical chemistry, immunochemistry, hematocytometry, and cytometry of body fluids and cerebrospinal fluid, coagulation screening tests.
 - **First-Level Specialized Area:** Basic allergology and autoimmunity, basic analytical chemistry, basic protein diagnostics, basic urinary diagnostics.
2. **Second-Level Specialized Diagnostics**, which includes the following activities and analytical lines:
 - Advanced allergology, including differential evaluation of rhinitis, urticaria, and food allergies.
 - Autoimmunity, with particular attention to celiac disease, autoimmune diseases of the liver and stomach, systemic connective tissue diseases (scleroderma and myositis), and blistering diseases.
 - Coagulation with tests for thrombophilia studies.
 - Protein diagnostics, including detection, identification, and quantification of serum and urinary monoclonal components, evaluation of intrathecal IgG synthesis in cerebrospinal fluid (CSF), diagnostics for thalassemias and hemoglobinopathies.
 - Advanced urinary diagnostics for evaluation of microhematuria and urinary stones.
 - Specialized analytical chemistry.
 - Toxicology and therapeutic drug monitoring using mass spectrometry methods dedicated to the determination of immunosuppressive and antifungal drugs.

We have established the following clinics:

- **Allergology:** Vaccine clinic for patients allergic to hymenoptera stings.
- **Celiac Disease:** Celiac and malabsorption clinic (in collaboration with Gastroenterology 2).

Main Research Areas

- **Hematocytometry and Cytometry of Body Fluids and Cerebrospinal Fluid:** Development and validation of diagnostic algorithms applicable to clinical practice based on information provided by modern analytical technology, evaluation of new parameters for diagnostic insight to reduce the time required for diagnostic assessment and optimize available resources.

- **Urinary Diagnostics:** Collaboration with leading companies in the sector to evaluate and develop new technological systems for studying the particulate component of sediment and for developing dedicated management software.
- **Autoimmunity:** Collaboration with leading companies in the sector to evaluate and develop new technologies and diagnostic tests and to create dedicated management software.
- **Analytical Pharmacology and Toxicology:** Development and application of definitive and reference methods in mass spectrometry for determining drugs not measurable with traditional analytical techniques.

Recognized Reference Centers

We are distinguished at the national level for our state-of-the-art technology, which ensures high-quality analytical performance in terms of diagnostic accuracy and response times. We are authorized to measure ethanol with forensic validity. We are a national reference center for routine implementation of liquid chemistry tests for the chemical-physical analysis of urine and general urinary diagnostics.

Areas of Excellence

- Diagnostics of autoimmune diseases.
- Diagnostics of hematuria and kidney diseases.
- Diagnostics and monitoring of monoclonal gammopathies.
- CSF diagnostics for inflammatory neurological diseases associated with intrathecal IgG synthesis.
- Monitoring of immunosuppressive and antifungal therapy.
- Use of high-complexity technologies: atomic absorption, liquid chromatography, gas chromatography, mass spectrometry, and radioimmunology.
- **Allergy Screening Diagnostic Activities:** Prick tests for main inhalant allergens and food allergens, microarray testing for single allergenic components (ISAC) (to be booked at the sampling center).
- **Specialized Allergy Diagnostic Activities:** Study of the nasal mucosa for evaluating non-allergic rhinitis; intradermal reactions with serum and autologous plasma for assessing chronic non-allergic urticaria; Prick by Prick with fresh foods and food additives for food allergies not detectable by classic tests.
- **Specialized Diagnostics for Celiac Disease**

Indicators

We perform over 4.4 million tests annually, covering more than 600 different types of tests, with 90 available on an urgent basis 24/7, 365 days a year, also supporting other public and private healthcare facilities in the region.

Certifications

We have obtained Quality Certification according to the UNI EN ISO 9001:2015 standard.

Educational Activities

We have active agreements with:

- University of Milan (teaching and internships)
- University of Milano-Bicocca (teaching and internships)
- IREF of Lombardy Region (training path for MAP)
- University of Pavia (internships)

Membership in Committees/Working Groups

We participate in a project of the Hematological Diagnostics Study Group SIBioC aimed at optimizing the organization of the hematocytometry analytical line. We are part of a network of laboratories nationwide, specializing in analytical pharmacology for the determination of immunosuppressive drugs, leveraging technology covering pre-analytical and analytical phases. We are part of the SIPMeL National Study Group for Autoimmunity and the SIPMeL-SIBioC-SIN intersociety group for urine testing.

Collaborations

We collaborate in the external quality assessment of urinary sediment. We work with the Lombardy Region on diagnostic protocol development and external quality evaluation for autoimmunity and celiac disease. We collaborate with the Bergamo Health Authority on developing diagnostic protocols for autoimmunity and celiac disease. We also collaborate with diagnostic companies in validating analytical systems and methods.