



## PPD® Laboratories Offers a Complete Menu of Central Lab Services Supported by Best-in-class Data Solutions

The PPD Laboratories central lab is dedicated to helping clients understand the safety and efficacy of their drug in patients. We offer a broad range of testing options for inclusion testing, safety and efficacy testing and exploratory biomarker studies. In addition, our single global database, interactive data portals and real-time data dashboards deliver integrated data to help you make better and faster decisions about your molecules.

### CENTRAL LAB SERVICES

- + Anatomic pathology
- + Autoimmune, inflammatory and allergy testing
- + Cell-based assays and flow cytometry
- + Chemistry and immunoassays
- + Chromatography, mass spectroscopy
- + Genomics, molecular assays
- + Hematology and coagulation
- + Microbiology
- + Protein analysis
- + Urinalysis

### THE PRECLARUS® CENTRAL LAB DATABASE

- + Proprietary laboratory enterprise and information management system
- + Contains central lab study definitions, patient data and lab test results in a single, global database
- + Provides access to patient and lab data in real-time
- + Interactive Web portals for project teams, sites and clients
- + Spotfire dashboards for project oversight
- + When PPD provides both clinical and laboratory services, patient data and lab results are integrated nightly and available via Preclarus dashboards in real-time.

### UNIQUE TO PPD LABORATORIES

- + Globally validated platforms and our unique Global Laboratory Assay Standardization Survey (GLASS) provide global standardization and eliminate the need to merge and harmonize data
- + Our single global database allows PPD Laboratories to test regionally and combine data globally
- + Real time data query resolution saves hundreds of hours at the end of the trial
- + Access to clean data in real time enables project teams to proactively monitor study-wide data

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The Preclarus® central lab database provides real-time access to clean lab data for the entire project team

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Highland Heights, Kentucky

Brussels, Belgium

Singapore

Shanghai, China

# Central Lab Capabilities Overview

Discipline/Methodology	Example Biomarkers/Assays	Key Instrumentation/Platform
Anatomic Pathology	<ul style="list-style-type: none"> <li>Histological services</li> <li>Grossing, embedding, microtomy</li> <li>Immunohistochemistry (IHC)</li> <li>H&amp;E, special stains and IHC stains</li> <li>Digitization of prepared specimens</li> <li>Sample interpretive reporting customized to meet client requirements</li> </ul>	<ul style="list-style-type: none"> <li>Thermo Scientific™ HistoStar™ Embedding Workstation</li> <li>Leica® RM2245 Microtome</li> <li>Leica® ST5020 Multistainer</li> <li>Ventana® BenchMark ULTRA</li> <li>Aperio® AT2 Digital pathology scanner</li> </ul>
Autoimmune/Inflammatory/Allergy	<ul style="list-style-type: none"> <li>Rheumatoid factor</li> <li>Autoantibodies</li> <li>Complement</li> <li>Interferon</li> <li>Free light chains</li> <li>ANA (anti nuclear antibodies)</li> <li>Interleukins</li> <li>Serum IgE</li> </ul>	<ul style="list-style-type: none"> <li>Thermo Scientific Phadia® 1000</li> <li>Siemens Healthcare BN™ II</li> <li>Beckman Coulter Access 2</li> <li>DiaSorin Liaison</li> </ul>
Cell-based Assays/Flow Cytometry	<ul style="list-style-type: none"> <li>PBMCs</li> <li>Immune response</li> <li>T-reg assays</li> <li>CD 3, 4, 8, 25, 19, 20, 39, 127, etc.</li> <li>MDSC - myeloid derived suppressor cells</li> <li>Cell enumeration</li> <li>Cell surface assays</li> <li>TBNC panel</li> </ul>	<ul style="list-style-type: none"> <li>BD FACSCanto™</li> </ul>
Chemistry/Immunoassay	<ul style="list-style-type: none"> <li>Bone markers</li> <li>Diabetes</li> <li>Toxicology</li> <li>Endocrinology</li> <li>Metabolic</li> <li>Infectious diseases</li> <li>Cardiac markers</li> <li>Drugs of abuse</li> <li>Oncology</li> <li>Routine chemistry</li> <li>Liver function</li> </ul>	<ul style="list-style-type: none"> <li>Roche Cobas® 6000 and 8000</li> <li>Beckman Coulter Access</li> <li>ADVIA Centaur XP Immunoassay System</li> <li>DiaSorin Liaison®</li> </ul>
Chromatography/Mass Spectroscopy	<ul style="list-style-type: none"> <li>Amino acids</li> <li>Nutritional (vitamins)</li> <li>Diabetes (hemoglobin A1C)</li> <li>Bone markers (vitamin D)</li> </ul>	<ul style="list-style-type: none"> <li>Waters Acquity</li> <li>Waters Xevo®</li> <li>Sciex 4000™, 5000™, 6500™ triple quadrupoles</li> <li>Agilent 5975 Turbo System GCMS</li> <li>Tosoh G8 HPLC Analyzer</li> </ul>
Genomics/Molecular	<ul style="list-style-type: none"> <li>RNA/DNA (extraction, quantitation, concentration, purity, etc.)</li> <li>Infectious diseases (HBV, HCV, HIV viral load)</li> </ul>	<ul style="list-style-type: none"> <li>Roche MagNA Pure LC 2.0</li> <li>Roche Cobas® Ampliprep</li> <li>Roche Taqman®</li> <li>Lightcycler 2.0</li> <li>Abbott Molecular m2000 RealTime System</li> <li>bioMérieux NucliSENS® easyMag®</li> </ul>
Hematology/Coagulation	<ul style="list-style-type: none"> <li>Clotting time studies</li> <li>D-dimer</li> <li>Factor evaluations</li> <li>CBC and differential</li> </ul>	<ul style="list-style-type: none"> <li>IL ACL Top® 500</li> <li>Beckman Coulter® LH 750</li> </ul>
Microbiology	<ul style="list-style-type: none"> <li>Bacteriology</li> <li>Candida screening</li> </ul>	<ul style="list-style-type: none"> <li>Beckman Coulter MicroScan Walkaway® Plus</li> <li>Dupont RiboPrinter®</li> </ul>
Protein analysis	<ul style="list-style-type: none"> <li>Lipoproteins</li> <li>C-reactive protein</li> <li>HDL, LDL, VLDL and ratios</li> <li>Triglycerides</li> <li>Protein electrophoresis</li> </ul>	<ul style="list-style-type: none"> <li>Roche Cobas® 8000</li> </ul>
Urinalysis	<ul style="list-style-type: none"> <li>Automated particle recognition (casts, crystals, cells etc.)</li> <li>Dipstick testing (ketone, protein, bilirubin etc.)</li> </ul>	<ul style="list-style-type: none"> <li>Iris® iQ200™ and iChem® Velocity™</li> <li>Siemens CLINITEK Atlas®</li> </ul>