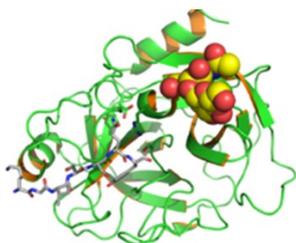


# Bioanalytics, Metabolomics and Pharmacokinetics Shared Resource (BMPK)

Director: Dr. James Mohler

## PSA Analysis in Mouse & Human Serum (Sensitivity: 100 pg/mL)

BMPK has validated a highly sensitive chemiluminescent microparticle immunoassay (CMIA) for the analysis of prostate specific antigen (PSA) in human and mouse serum. The assay was validated using the Abbott Architect® autoimmunoanalyzer and its associated PSA kit system. Sample analysis is performed by the robotic liquid handler, which accurately times each stage of sample preparation for each sample, eliminating the variability associated with time-dependent manual pipetting that can affect overall accuracy and precision. PSA is a serine protease with chymotrypsin-like activity produced by the prostate, a small gland that sits below the bladder in men, and is typically found in semen with small amounts being traceable in the bloodstream<sup>1,2</sup>. While PSA levels in men may vary, common PSA testing procedures can be used to detect the onset of prostate cancer. This assay was used to support a Roswell Park R&D study entitled “Humanize Mice and Evaluate the Effect of Adrenal Androgen Silastic Tubing Implants on CWR22 Tumor Growth and Recurrence”.



Prostate Specific Antigen (PSA)

Also known as gamma-seminoprotein or kallikrein-3 (KLK3)

Size: 237 amino acids  
Molecular mass: 26,079 Da

Specifications and Validation Performance	
<b>Matrix:</b>	Human & Mouse Serum
<b>Required Volume:</b>	100 µL
<b>Assay Procedure:</b>	Abbott Architect®, CMIA
<b>Sample Throughput:</b>	20 samples per hour
<b>Calibration Range:</b>	0.100 ng/mL — 100 ng/mL *Higher concentrations can be diluted to bring within calibration range
<b>QC Concentrations:</b>	0.500, 4.00 and 23.0 ng/mL
<b>Calibrator Accuracy:</b>	117% (116 - 118%; n = 8 runs)
<b>Calibrator Precision:</b>	5.64% CV (5.52 - 5.75%; n = 8 runs)
<b>QC Accuracy:</b>	88.0% (82.7 - 97.2%; n = 24 per QC level)
<b>QC Precision:</b>	3.09% CV (2.34 – 4.42%; n = 24 per QC level)
<b>Freeze-Thaw Stability:</b>	3 Cycles (Human), 2 Cycles (Mouse)

<sup>1</sup>Mayo Foundation for Medical Education and Research (MFMER). <sup>2</sup>Abbott Package Insert, 6C06, August 2017. PSA schematic from Wikipedia.

BMPK offers a wide range of bioanalytical and PK/PD modeling services to assist investigators in their basic research, preclinical, and clinical study objectives.

For information on services and pricing, contact **Wenjuan Zha, Ph.D.**, Associate Director, at (716) 845-3258 or [Wenjuan.Zha@RoswellPark.org](mailto:Wenjuan.Zha@RoswellPark.org).

