Frequently Asked Questions

What is the design of Catalyst Progesterone?

Catalyst* Progesterone is a competitive, enzyme-based, colorimetric, immunoassay system run on the Catalyst One* Chemistry Analyzer and Catalyst Dx* Chemistry Analyzer.

Unlike many progesterone assays, Catalyst Progesterone was designed specifically to measure progesterone in canine plasma and serum samples. Its intended use is to predict and confirm ovulation and maximize reproductive success.

What is the reference method for Catalyst Progesterone?

Catalyst Progesterone is calibrated using liquid chromatography mass spectrometry (LC-MS) as the reference method. As published in the *Catalyst Progesterone for in-house measurement of progesterone in plasma from bitches* white paper, Catalyst Progesterone demonstrates very good correlation ($r = 0.98$; $r = 0.99$) to the study reference method of LC-MS and good precision in the range of clinical interest.

What is LC-MS?

Liquid chromatography mass spectrometry (LC-MS) is a highly accurate and specific method to determine analyte concentrations in biologic samples. Due to its superior performance, LC-MS is an internationally recognized reference method for steroid hormone analysis within human medicine. IDEXX utilized a canine specific LC-MS protocol as our reference method to bring advances in human medicine to the veterinary industry. The LC-MS method is typically time consuming, expensive, and labor intensive and is therefore not conducive to routine clinical testing. Calibration of Catalyst Progesterone to LC-MS provides traceability from the analytical lab to the in-clinic setting for IDEXX customers.

Why did IDEXX choose LC-MS as the reference method for Catalyst Progesterone?

IDEXX selected LC-MS as the reference method for Catalyst Progesterone because we consider it to be the most specific and consistent analytical method for measuring progesterone in canine samples. In choosing LC-MS as the reference method for Catalyst Progesterone, **IDEXX's goal is to provide you with the most accurate in-clinic progesterone assay, specifically developed to measure progesterone concentrations in canine samples.**

As compared to other analytical methods, LC-MS provides superior specificity and sensitivity, especially in the measurement of steroid hormones, such as progesterone. While the Siemens IMMULITE* progesterone assay—the method used at IDEXX Reference Laboratories and other commercial veterinary laboratories—has been widely used across the industry, **instrument-to-instrument variation across various reference laboratory tests made this method less attractive as a reference method for Catalyst Progesterone. Furthermore, the original intended use of many assays used at veterinary reference laboratories was to measure progesterone in human serum samples.**

How do Catalyst Progesterone results compare to IDEXX Reference Laboratories progesterone results?

Because Catalyst Progesterone is calibrated directly to LC-MS, it will generally report more progesterone in canine samples when compared to the IMMULITE method used at IDEXX Reference Laboratories. This effect is a function of the amount of progesterone in the sample and will be more apparent at high concentrations.

Trending individual patient results consistently on one method and using one sample type (plasma or serum) will give the clearest indication of the progression of each reproductive cycle.

The bias seen between progesterone results when comparing two methods is a function of the amount of progesterone in the sample—the higher the concentration of progesterone in the sample, the more bias and variability will be observed.

Despite methodological differences, use of either method will depict the same trending patterns when evaluating bitches over time to predict ovulation and optimal breeding timing. Representative examples of individual patients trended over time on both the Catalyst Progesterone and IMMULITE methods are shown at right.

Note: Decisions regarding breeding should not be made based on progesterone testing alone.