Zoetis Reference Laboratories: Reference Interval Sources

The majority of the reference intervals used by ZRL for core lab tests and core species were generated *de novo* using healthy animals that are representative of the patient population.
Reference intervals for the select tests/species below were taken from other sources following an evaluation of the patient population and methodology used to generate the intervals. As these reference intervals are not laboratory- or patient-specific, caution should be used when interpreting results.

Canine

Canine PCV: Jain NC. Schalm's Veterinary Hematology, 4th ed. 1986.

Canine Plasma Protein: Cornell University Animal Health Diagnostic Center.

Feline

Feline PCV: Cornell University Animal Health Diagnostic Center.

Feline Plasma Protein: University of Guelph Animal Health Laboratory.

Equine

Equine PCV: Cornell University Animal Health Diagnostic Center.

Rabbit

Rabbit CBC: Schalm's Veterinary Hematology (7th ed).

Rabbit Chemistry: Quesenberry Ferrets, Rabbits, and Rodents (3rd ed), Biology of the Laboratory Rabbit (2nd ed), and Exotic Animal Formulary (5th ed).

Ferret

Ferret Plasma Protein and CBC: University of Guelph Animal Health Laboratory.

Ferret Chemistry: University of Guelph Animal Health Laboratory and from Hein et al., Reference ranges for laboratory parameters in ferrets. Vet Rec 2012;171(9):218.

Bovine

Bovine PCV: Cornell University Animal Health Diagnostic Center.

Bovine Plasma Protein: University of Guelph Animal Health Laboratory.

Bovine CBC: University of Guelph Animal Health Laboratory, Cornell University Animal Health Diagnostic Center, and Schalm's Veterinary Hematology (6th ed).

Bovine Chemistry: University of Guelph Animal Health Laboratory and several other university diagnostic laboratories.

Caprine

Caprine PCV: Cornell University Animal Health Diagnostic Center.

Caprine Plasma Protein: Jain NC. Schalm's Veterinary Hematology, 4th ed. 1986.

Caprine CBC: University of Guelph Animal Health Laboratory.

Caprine Chemistry: Cornell University Animal Health Diagnostic Center.

Porcine

Porcine PCV/Plasma Protein: Jain NC. Schalm's Veterinary Hematology, 4th ed.

Porcine CBC: University of Guelph Animal Health Laboratory and Klem et al., Hematologic and biochemical reference intervals for Norwegian crossbreed grower pigs. Vet Clin Path 2010;39(2):221-226.

Porcine Chemistry: University of Guelph Animal Health Laboratory.

Ovine

Ovine PCV/Plasma Protein: Jain NC. Schalm's Veterinary Hematology, 4th ed.

Ovine CBC and Chemistry: Frye et al., Complete blood count and biochemistry reference intervals for healthy adult sheep in the northeastern United States. Vet Clin Path 2022;51(1):119-125.

Alpaca

Alpaca PCV: Cornell University Animal Health Diagnostic Center.

Alpaca Plasma Protein and CBC: Dawson et al., Reference intervals for hematologic and coagulation tests in adult alpacas (Vicugna pacos). Vet Clin Path 2011;40(4):504-512.

Alpaca Chemistry: Dawson et al., Reference intervals for biochemical analytes in serum and heparinized plasma and serum protein fractions in adult alpacas (Vicugna pacos). Vet Clin Path 2011;40(4):538-548.

Llama

Llama PCV/Plasma Protein and CBC: The Ohio State University.

Llama Chemistry: Niehaus Medicine and Surgery of Camelids (4th ed).