Literature List – Veterinary

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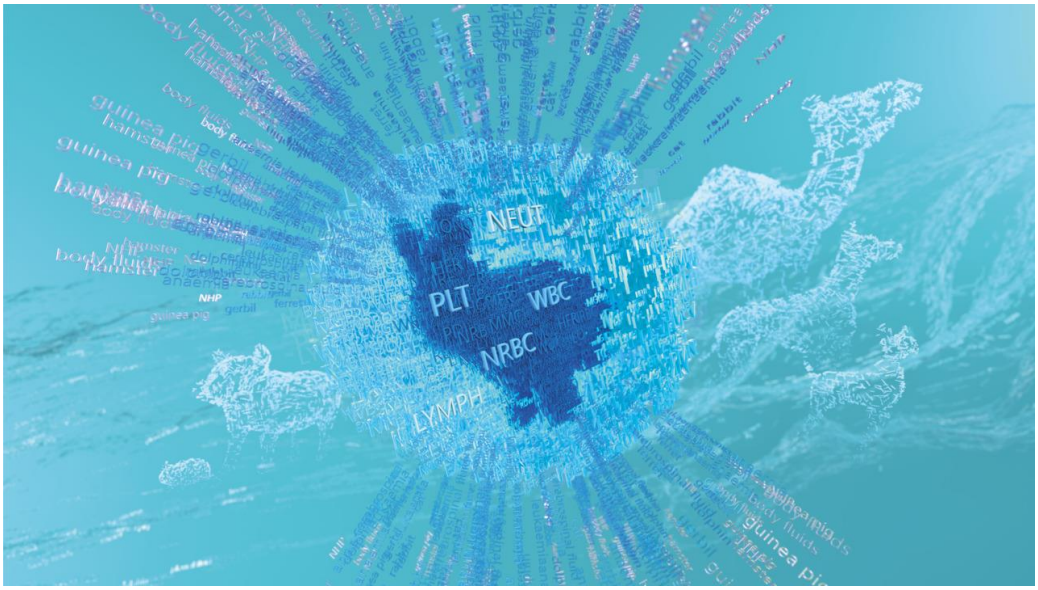
January 2024



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NEW

New entries are highlighted by this icon.

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General

Vap LM *et al*. (2012)

ASVCP quality assurance guidelines: control of preanalytical and analytical factors for hematology for mammalian and nonmammalian species, hemostasis, and crossmatching in veterinary laboratories.
Vet Clin Pathol; 41(1): 8

Free online: https://onlinelibrary.wiley.com/doi/10.1111/j.1939-165X.2012.00413.x

Summary: Guideline that provides recommendations for control of preanalytical and analytical factors related to haematology for mammalian and non-mammalian species.

Natibi M *et al.* (2018)

ASVCP guidelines: Allowable total error hematology.
VET Clin Pathol; 47: 9

Free online: https://www.onlinelibrary.wiley.com/doi/epdf/10.1111/vcp.12583

Summary: Recommendations discussing how to perform evaluation of haematological measurements. Definition of Total allowable error (TEa) for the most common analysed haematological parameters are defined.

Cats

Paltinieri S *et al.* (2018)

Diagnostic performances of manual and automated reticulocyte parameters in anaemic cats.
J Feline Med Surg; 20(2): 122

https://journals.sagepub.com/doi/full/10.1177/1098612X17699067?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed

Summary: Reticulocyte percentage (Ret%), reticulocyte number (Ret#) and reticulocyte production index (RPI) may be used to differentiate regenerative anaemia (RA) from non-regenerative anaemia (NRA) in cats.

Cook AM *et al.* (2016)

Quality requirements for veterinary hematology analyzers in small animals-a survey about veterinary experts' requirements and objective evaluation of analyzer performance based on a meta-analysis of method validation studies: bench top hematology analyzer.
VET Clin Pathol; 45(3): 466

https://onlinelibrary.wiley.com/doi/abs/10.1111/vcp.12383

Summary: Total allowable error (TEa) is determined for haematological parameters for dogs and cats based on experts survey. Using published data the authors conclude that XT-2000iV, ADVIA 2120 and Cell-Dyn 3500 fulfilled experts requirements. Despite known difficulties of both methods, manual and analyser, in identifying monocytes the authors point out here that medical relevant monocytoses were detected.

Riond B *et al.* (2015)

Effective prevention of pseudothrombocytopenia in feline blood samples with the prostaglandin I2 analogue Iloprost.
BMC Vet Res.; 11: 183

Free online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4545814/

Summary: The study showed an anti-aggregatory effect of Iloprost in feline blood. In all clinically healthy cats investigated, pseudothrombocytopenia was prevented by adding Iloprost to EDTA tubes prior to blood collection.

Granat F *et al*. (2014)

Feline reference intervals for the Sysmex XT-2000iV and the ProCyte DX haematology analysers in EDTA and CTAD blood specimens.
J Feline Med Surg;16(6): 473

http://journals.sagepub.com/doi/abs/10.1177/1098612X13511811?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed

Summary: Reference intervals (RI) were established for cats using XT-2000iV and Procyte. These RI can be directly applied in veterinary laboratories using these analysers. CTAD is a better option than EDTA for feline blood samples.

Bauer N *et al*. (2012)

Evaluation of the automated hematology analyzer Sysmex XT-2000iV ™ compared to the ADVIA ® 2120 for its use in dogs, cats, and horses. Part II: Accuracy of leukocyte differential and reticulocyte count, impact of anticoagulant and sample aging.
J Vet Diagn Invest; 24(1): 74

Free online: http://journals.sagepub.com/doi/pdf/10.1177/1040638711436243

Summary: The overall performance of the Sysmex XT-2000iV was excellent and compared favourably with that of the ADVIA 2120 as well as manual count.

Weissenbacher S *et al*. (2011)

Evaluation of a novel haematology analyser for use with feline blood for use with feline blood.
Vet J; 187(3): 381

Free online: https://doi.org/10.5167/uzh-32764

Summary: The XT-2000iV is suitable for use with feline blood. Sysmex overcomes the problem of size-overlapping between RBC and PLT with the PLT-O which has a fairly good correlation to the manual count.

Dogs

NEW

Jornet-Rius O *et al.* (2023)

Performance of the Sysmex XN-V hematology analyzer in determining the immature platelet fraction in dogs: A preliminary study and reference values.
Vet Clin Pathol; 52(3): 433

Free online: https://onlinelibrary.wiley.com/doi/10.1111/vcp.13241

Summary: Variables derived from the PLT-F channel showed excellent analytical performance in dogs. Immature platelets can be reliably detected up to 24 hours post sampling, but interpretation should be done carefully if haemolysis, lipaemia or platelet clumps are present. The authors suggest using specific reference intervals for samples with confirmed platelet aggregation.

Oritz-Nisa S *et al.* (2021)

Performance of the Sysmex XN-V body fluid module for canine cerebrospinal fluid cell count.
Vet Clin Pathol; 50(3): 359

https://onlinelibrary.wiley.com/doi/10.1111/vcp.12992

Summary: XN-V BF mode is a suitable tool for fast and accurate quantification of total nucleated cells (TNC) in canine CSF samples. The study found good analytical performance of XN-V to detect pleocytosis in comparison with Neubauer chamber (92.6% sensitivity and 94.3% specificity).

Grebert M *et al.* (2021)

Validation of the Sysmex XN-V hematology analyzer for canine specimens.
Vet Clin Pathol; 50(2): 184

Free online: https://onlinelibrary.wiley.com/doi/10.1111/vcp.12936

Summary: The performance of the Sysmex XN-V analyser was excellent and compared favourably with the XT-2000iV. Nevertheless, as recommended for all devices, the automated WBC differential should only be accepted after reviewing the scattergram and a blood smear to validate automated results.

Fuchs J *et al.* (2017)

Canine reticulocyte hemoglobin content (RET-He) in different types of iron-deficient erythropoiesis.
Vet Clin Pathol; 46(3): 422

http://onlinelibrary.wiley.com/doi/10.1111/vcp.12499/abstract

Summary: Based on the study results the authors propose that RET-He can be considered as an early indicator of iron deficiency.

Cook AM *et al.* (2016)

Quality requirements for veterinary hematology analyzers in small animals-a survey about veterinary experts' requirements and objective evaluation of analyzer performance based on a meta-analysis of method validation studies: bench top hematology analyzer.
VET Clin Pathol; 45(3): 466

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Summary: Total allowable error (TEa) is determined for haematological parameters for dogs and cats based on expert's survey. Using published data, the authors conclude that XT-2000iV, ADVIA 2120 and Cell-Dyn 3500 fulfilled experts' requirements. Despite known difficulties of both methods, manual and analyser, in identifying monocytes the authors point out here that medical relevant monocytoses were detected.

Piane L *et al*. (2016)

Spurious reticulocyte profiles in dogs with large form babesiosis: a retrospective study.
Vet Clin Pathol; 45(4): 598

https://onlinelibrary.wiley.com/doi/pdf/10.1111/vcp.12396

Summary: Abnormal reticulocyte scattergrams may occur in dogs with babesiosis and alert clinical pathologist to consider diagnosis.

Lee JM *et al*. (2016)

Changes of hematological reference depends on storage period and temperature conditions in rats and dogs.
Lab Anim Res; 32(4): 241

Free online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5206231/

Summary: When measuring haematological samples of dogs and rats, it will be necessary to analyse fresh blood since PLT and WBC showed high variation with time and temperature. Good agreement and correlation between Advia 2120i and XN-V for CBC parameters and WBC subpopulations were found.

Novacco M *et al.* (2015)

Analytic errors in Sysmex-generated hematology results in blood from a dog with chronic lymphocytic leukemia.
Vet Clin Pathol; 44(3): 337

https://onlinelibrary.wiley.com/doi/abs/10.1111/vcp.12270

Summary: Dog case of chronic T cell lymphocytic leukaemia showing how extreme lymphocytosis interferes in the RET scattergram leading to false high RBC-O and RET.

Bourges-Abella NH *et al*.(2014)

Changes in hematology measurements in healthy and diseased dog blood stored at room temperature for 24 and 48 hours using the XT-2000iV analyser.
Vet Clin Pathol; 43(1): 24

Free online: http://onlinelibrary.wiley.com/doi/10.1111/vcp.12119

Summary: "Delayed analysis of canine blood stored at room temperature and measured by the XT-2000iV was accompanied by moderate variations in certain haematologic variables (MCV, HCT, MCHC, PLT, RET#, RET%, MONO#)."

Bauer N *et al*. (2012)

Evaluation of the automated hematology analyzer Sysmex XT-2000iV ™ compared to the ADVIA ® 2120 for its use in dogs, cats, and horses. Part II: Accuracy of leukocyte differential and reticulocyte count, impact of anticoagulant and sample aging.
J Vet Diagn Invest; 24(1): 74

Free online: http://journals.sagepub.com/doi/pdf/10.1177/1040638711436243

Summary: The overall performance of the Sysmex XT-2000iV was excellent and compared favourably with that of the ADVIA 2120 as well as manual count.

Bourges-Abella NH *et al*. (2011)

Canine reference intervals for the Sysmex XT-2000iV hematology analyzer.
Vet Clin Pathol; 40(3): 303

https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1939-165X.2011.00333.x

Summary: Reference intervals for haematologic analytes and indices were determined under controlled conditions for a well characterised population of dogs following international recommendations. These reference intervals can be adopted by laboratories using similar equipment and canine patient population.

Gelain ME *et al*. (2010)

Identification of neoplastic cells in blood using the Sysmex XT-2000iV: a preliminary step in the diagnosis of canine leukemia.
Vet Clin Pathol; 39(2): 169

https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1939-165X.2010.00214.x

Summary: The creation of a 'leukaemia flag' consisting of increased WBC count, a high fluorescence area gate and a lysis resistant region provides an automated, reliable and rapid tool for preliminary investigation of dogs with suspected leukaemia. The flag is objective and has high specificity which can be further increased by scattergram evaluation.

Mathers RA *et al*. (2008)

Evaluation of the Sysmex XT-2000iV haematology analyser for rat, dog and mouse whole blood samples.
Comp Clin Pathol; 17: 137

https://link.springer.com/article/10.1007/s00580-008-0734-2

Summary: The XT-2000iV analyser proved to be reliable with satisfactory performance for analysing rat, dog, and mouse blood samples. The analyser was robust and reliable with no breakdowns or software problem encountered in this pharmaceutical lab setting.

Horses

O'Neil E 2014 *et al*. (2014)

What is your diagnosis - Blood smear from a foal.
Vet Clin Pathol; 43(2): 287

https://onlinelibrary.wiley.com/doi/10.1111/vcp.12133

Summary: Reticulocytes are typically not expected in the blood of horses, even with significant haemolysis or haemorrhage, therefore reticulocytosis evident with automated and manual methods is of particular interest. However, with newer haematology analysers (e.g. XT-2000iV, Advia), the identification of low numbers of cells with nucleic acid fluorescence designated as reticulocytes has been reported in horses.

Bauer N *et al*. (2012)

Evaluation of the automated hematology analyzer Sysmex XT-2000iV ™ compared to the ADVIA ® 2120 for its use in dogs, cats, and horses. Part II: Accuracy of leukocyte differential and reticulocyte count, impact of anticoagulant and sample aging.
J Vet Diagn Invest; 24(1): 74

Free online: http://journals.sagepub.com/doi/pdf/10.1177/1040638711436243

Summary: The overall performance of the Sysmex XT-2000iV was excellent and compared favourably with that of the ADVIA 2120 as well as manual count.

Mice/Rats

Davenport P *et al*. (2021)

Development of gates to measure the immature platelet fraction in C57BL/6J mice using the Sysmex XN-V series multispecies hematology analyzer.
J Vet Diagn Invest; 33(5): 913

https://journals.sagepub.com/doi/10.1177/10406387211027899?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

Summary: Platelet counts and IPF measured in diluted blood using two newly created IPF gates (thrombocytopenic / non thrombocytopenic) agreed well with those measured in undiluted blood and had good reproducibility. These diluted gates allow for the accurate measurement of PLT and IPF in small blood volumes, which can be obtained easily from adult and newborn mice.

Poitout-Belissent F *et al*. (2021)

Aspiration and Inspiration: Using Bronchoalveolar Lavage for Toxicity Assessment.
Toxicol Pathol; 49(2): 386

Freeonline: https://journals.sagepub.com/doi/10.1177/0192623320929318?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed

Summary: XN-1000V allows high throughput total nucleated cell count (TNCC) and cellular differential evaluation at very low concentrations of bronchoalveolar lavage fluid (BALF) in laboratory animals. XN-V allows manual gating to create different profiles according to the species.

Ennis KM *et al*. (2018)

Reticulocyte hemoglobin content as an early predictive biomarker of brain iron deficiency.
Pediatr Res; 84(5): 765

Free online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6519747/

Summary: The study shows that RET-He is the only red cell parameter that identifies rat individuals at risk for brain iron deficiency in the pre-anaemic stage.

Lee JM *et al*. (2016)

Changes of hematological reference depends on storage period and temperature conditions in rats and dogs.
Lab Anim Res; 32(4): 241

Free online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5206231/

Summary: When measuring haematological samples of dogs and rats, it will be necessary to analyse fresh blood since PLT and WBC showed high variation with time and temperature. Good agreement and correlation between Advia 2120i and XN-V for CBC parameters and WBC subpopulations were found.

White JR *et al*. (2016)

Evaluation of hematologic variables in newborn C57/BL6 mice up to day 35.
Vet Clin Pathol; 45(1): 87

Free online: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4805471

Summary: Reference intervals (RI) were established for newborn mice of C57/BL6 strain, which is commonly used for research in disease models.

Moorhead KA *et al*. (2016)

Alterations due to dilution and anticoagulant effects in hematologic analysis of rodent blood samples on the Sysmex XT-2000iV.
Vet Clin Pathol; 45(2): 215

Free online: http://onlinelibrary.wiley.com/doi/10.1111/vcp.12338

Summary: Several variables, most notably platelet count, differ based on the anticoagulant used thus the values from heparinized vs EDTA-anticoagulated samples should not be directly compared. Dilution has effect on MCV and MCHC.

Criswell KA *et al*. (2014)

Comparison of the Sysmex XT-2000iV and microscopic bone marrow differential counts in Wistar rats treated with cyclophosphamide, erythropoietin, or serial phlebotomy.
Vet Clin Pathol; 46(2): 137

Free online: http://onlinelibrary.wiley.com/doi/10.1111/vcp.12149

Summary: The Sysmex XT-2000iV provides quantitative bone marrow differential counts in rats treated with cyclophosphamide, erythropoietin, or serial phlebotomy. Analyser results were comparable to microscopic differential counts.

Mathers RA *et al*. (2008)

Evaluation of the Sysmex XT-2000iV haematology analyser for rat, dog and mouse whole blood samples.
Comp Clin Pathol; 17: 137

https://link.springer.com/article/10.1007/s00580-008-0734-2

Summary: The XT-2000iV analyser proved to be reliable with satisfactory performance for analysing rat, dog and mouse blood samples. The analyser was robust and reliable with no breakdowns or software problem encountered in this pharmaceutical lab setting.

Non-mammalian

Dickinson VM *et al*. (2002)

Hematology and plasma biochemistry reference range values for free-ranging desert tortoises in Arizona.
J Wildl Dis; 38(1): 143

Free online: https://meridian.allenpress.com/jwd/article/38/1/143/122594/HEMATOLOGY-AND-PLASMA-BIOCHEMISTRY-REFERENCE-RANGE

Summary: This study provides haematological and biochemistry reference ranges for desert tortoises. Rainfall patterns determine the amount of forage that leads to variation in the blood values.

Others

Yu W *et al*. (2019)

Hematological and biochemical parameters for Chinese rhesus macaque.
PLoS One; 14(9): e0222338

Free online: https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0222338

Summary: Establishment of reference intervals for haematologic and biochemical parameters for Chinese rhesus macaque using XT-2000iV. Age and sex specific reference ranges are provided.

Herman N *et al*. (2018)

Hematology reference intervals for adult cows in France using the Sysmex XT-2000iV analyzer.
J Vet Diagn Invest; 30(5): 678

Free online: http://journals.sagepub.com/doi/abs/10.1177/1040638718790310?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dpubmed

Summary: Reference intervals (RI) were established for cattle using XT-2000iV. These RI can be used in veterinary laboratories after validation if the cattle population is different.

Burden FA *et al*. (2016)

Reference intervals for biochemical and haematological parameters in mature domestic donkeys (Equus asinus) in the UK.
Equine Veterinary Education; 28(3): 134

Free online: https://onlinelibrary.wiley.com/doi/epdf/10.1111/eve.12512

Summary: The authors define reference intervals for haematological and biochemical parameters in mature domestic donkeys.

Lilliehöök I *et al*. (2011)

Errors in basophil enumeration with 3 veterinary hematology systems and observations on occurrence of basophils in dogs.
Vet Clin Pathol; 40(4): 450

https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1939-165X.2011.00353.x

Summary: Canine basophils are not well detected in most haematology analysers. Disturbances in dot-plots may guide to check smears for basophils. Nevertheless, a limitation of this study is the small sample size (17 samples).