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# VETERINARY DIAGNOSTIC LABORATORY

Featured in this issue: Director's Message, Featured Faculty, Coombs' Test

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## Director's Message

We have had a few complaints regarding multiple faxes or duplication of reports. Our overriding concern is to get the laboratory results to you as quickly as possible. Reports have been faxed directly from the clinical pathology laboratory with the invoice following a day later along with another report. We have now dropped the second report if this is a clinical pathology submission only. You may still get duplicate reports if there are multiple test requests and some tests are completed earlier than others. An example may be a CBC and culture where the CBC will be reported on the day of submission and the culture reported a few days later. This would result in a repeat of the CBC results on the final report. Hopefully, our change in handling clinical pathology reporting will alleviate some of the duplication of reports. If this still remains a concern, please contact us at [vdldirectoroffice@vetmed.illinois.edu](mailto:vdldirectoroffice@vetmed.illinois.edu) or call 217-333-7259 and give us an example of the problem. Also, contact us if you are using WEBVAD and do not want a fax report.

Walter E. Hoffmann, DVM, PhD, Interim Director

## Featured Faculty

Dr. Rick Fredrickson, clinical associate professor in pathology and assistant director of the VDL, joined the faculty in 2002 after completing his residency in pathology at Illinois. Dr. Fredrickson received a DVM degree and a master of science degree in veterinary toxicology from Iowa State University in 1990. He originally practiced in a mixed animal practice focusing on production animal and equine for 4 years, and then owned a primarily large animal practice until 1999, when he came to the University of Illinois for residency training. Dr. Fredrickson is interested in all aspects of pathology but has a primary interest in production animal and equine pathology. He currently handles all of the submitted field necropsies, or necropsies in a box, as well as taking regular rotations on the necropsy floor and training 4<sup>th</sup> year veterinary students. He serves as section head for anatomic pathology and is responsible for the histology laboratory and diagnostic receiving. He feels it is important to maintain an open line of communication with our clients. Feel free to call him at 217-333-1620 or send an e-mail to [frdrcksn@illinois.edu](mailto:frdrcksn@illinois.edu) if you have questions regarding a case.

## Coombs' Test: Dr. Anne Barger

The Coombs' test is used most commonly for the diagnosis of immune-mediated hemolytic anemia (IMHA). This test was originally discovered by a veterinarian, Robin Coombs, for human medicine for the diagnosis of IMHA and to screen for red blood cell alloantibodies. Two forms of the test, indirect and direct, are available; however, direct Coombs is used most commonly in veterinary medicine for the diagnosis of IMHA. Veterinary reagents contain anti-IgG, anti-IgM and anti-C3 antibodies and are species specific. In a study with 23 dogs with IMHA, 11 had a positive Coombs' test. Of those 11, 6 had IgG and C3, 2 had IgG only, 2 had C3 only and 1 had IgG, IgM and C3. Therefore, use of a combined reagent is more sensitive. This test is available for dogs, cats and horses. The test is fairly simple to perform, however the steps must be followed closely. Essentially, anticoagulated blood is washed with saline and the antiglobulin reagent is added at different dilutions, usually 1:2, 1:4 and 1:8. The blood and reagent are incubated and then examined macroscopically and microscopically for agglutination. IgG sensitized red blood cells or check cells are used as a positive control. If agglutination is noted either macroscopically or microscopically, the test is considered positive. False positive and false negative test results are not uncommon. False positive results can occur when clotted blood is used, blood is collected from infusion lines, there are cold agglutinins present, the patient has hypergammaglobulinemia, or there exists nonspecific inflammatory diseases. Therefore, this test should be reserved for patients with anemia and suspect IMHA. False negative results can occur if the steps of the test are not carefully followed or if the reagent is contaminated by bacteria or is frozen multiple times. The VDL offers the Coombs' test at a fee of \$30 and it is included in the IMHA panel, which also includes a CBC and reticulocyte count for dog and cat samples for \$45. One mL of an EDTA sample is required. The test is run daily soon after arrival in the laboratory. References: Wardrop JK. The Coombs' test in veterinary medicine: past, present, future. *Vet Clin Pathol* 2005;34:325-334. Jones DRE, et al. Investigation into factors influencing performance of the canine antiglobulin test. *Res Vet Sci* 1990; 48:53-58.