



Veterinary Diagnostic
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WE ARE ON THE WEB!
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VETERINARY DIAGNOSTIC LABORATORY

Featured in this issue: Director's Message, Featured Faculty, Extra-intestinal *E. coli* Alert, D-dimers

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Director's Message

The VDL faculty and staff wish all of you a happy holiday and a productive and prosperous new year. Again, we want to thank you for your submissions during the past year and look forward to working with you in 2009.

The VDL will be open over the holidays with the exception of December 24-26 and January 1. However, mail and UPS/FedEx shipments will be received on December 24, 26, and 27, and samples for clinical pathology and microbiology will be analyzed and reported on those days. All other specimens will be held until December 29 for analysis. Emergency pathology service will be available with the exception of December 25 and January 1. Since the University is closed for 9 days, it is important that any mail sent to the VDL during the holidays via USPS be addressed to **PO Box U, Urbana, IL 61802**. Shipments via UPS/FedEx should be directed to **Room 1137, 2001 S. Lincoln Ave., Urbana, IL 61802**.

Walter E. Hoffmann, DVM, PhD, Interim Director

Featured Faculty

We are very fortunate that Dr. Kuldeep Singh joined the faculty of the VDL as a pathologist in January 2008. Dr. Singh received his professional veterinary degree from the G. B. Pant University of Agriculture and Technology in Pantnagar, India, in 1999. After a one-year stay at the Indian Veterinary Research Institute as a junior research fellow in pathology, he completed a two-year residency and master of science degree in pathology at Utrecht University in The Netherlands. Prior to joining us at Illinois, he completed a three-year residency and a PhD in anatomic pathology at Oklahoma State University, where he also served as a lecturer for one year. His PhD research was on *Mannheimia haemolytica* infection in cattle. At this point, Dr. Singh is serving in all areas of pathology but is quickly developing some special interests in tumor pathology and pulmonary diseases. Dr. Singh is eager to serve the clients of the VDL. Please feel free to contact him at 217-333-1620 with any questions or concerns you might have.

Extra-intestinal *E. coli* Alert: Dr. Carol Maddox

There has been an increase in the number of extra-intestinal infections with beta-hemolytic *Escherichia coli* among kittens and puppies, especially those that have been in shelters. Many of the isolates carry cytotoxic necrotizing factors and other virulence genes that make this organism an aggressive pathogen, especially among young or otherwise immuno-compromised pets. Adult animals may asymptotically carry this organism as part of their urogenital tract flora, while some may suffer cystitis and possible pyelonephritis as a result of prolonged infection. Antimicrobial susceptibilities can be quite variable, and MIC testing is recommended. There has not been evidence of zoonotic transmission, but further studies are under way. For further reading, a review was published by Beutin in *Veterinary Research* "Escherichia coli as a pathogen in dogs and cats" 1999 Mar-Jun;30(2-3):285-98.

D-dimers: Dr. Anne Barger

Clot formation is a balancing act between platelets, the coagulation cascade and the fibrinolytic system. When a fibrin clot is formed, the fibrinolytic system is activated to limit the extent of thrombus formation. Fibrinolysis consists of an enzymatic degradation of the thrombus and acts to restore vessel patency after the bleeding has been controlled. Plasmin is a key factor in the fibrinolytic system and degrades fibrinogen and cross-linked fibrin monomers to plasma fibrin(ogen) degradation products (FDPs), of which D-dimers are a subset.

FDPs are formed when fibrin or fibrinogen is degraded, whereas D-dimers are formed only when a cross-linked fibrin clot is degraded. Evaluation of the fibrinolytic system can be done by measuring FDPs, but the determination of D-dimers has been shown to be more sensitive. The VDL has begun to offer D-dimer measurement as part of the canine coagulation profile. This is a useful test in diagnosis of thromboembolic disease and diffuse intravascular coagulation (DIC). In the diagnosis of DIC, D-dimers need to be used in conjunction with other laboratory tests, including PT, APTT and platelet count. A combination of abnormal test results including thrombocytopenia, prolonged PT and APTT and elevated D-dimers is necessary to diagnose DIC. At this point the D-dimer test has been validated only for dogs.

Submission for the D-dimer test, as well as the PT and APTT tests, requires plasma harvested from a citrate tube (blue top vacutainer which we can supply on request) and shipped on ice or a cold pack overnight. Addition of a purple top tube (EDTA) will allow us to provide a platelet count and thereby completion of the coagulation profile. Fee for the D-dimer is \$27 alone and for the coagulation profile (platelets, D-dimer, fibrinogen, PT, and APTT) \$74. Call 217-333-5342 for information.