DGGR Lipase

A NEW TOOL TO AID DIAGNOSIS OF CANINE & FELINE PANCREATITIS

The University of Tennessee College of Veterinary Medicine Clinical Pathology Laboratory now offers the DGGR lipase assay, an alternative to an older, less analytically specific lipase assay using a different reagent. Advantages of the DGGR lipase assay are a faster turnaround time and a lower price than the PLI assay. The DGGR lipase assay is designed to measure only pancreatic lipase instead of all forms of lipase as the older lipase assay did. Our laboratory has replaced the less specific lipase assay with the new DGGR lipase method. When you see "Lipase" listed on request forms or patient reports from the UTCVM, this is the DGGR lipase method.

DGGR vs PLI Comparison

Scientific literature on the DGGR lipase assay in veterinary medicine is just starting to emerge. Two studies of patients with clinically suspected pancreatitis, one in dogs and one in cats, showed good correlation of the DGGR lipase assay with quantitative canine and feline pancreatic lipase immunoreactivity (PLI) assays (Spec cPL™ and Spec fPL™, respectively). In these studies, patients with normal values for the PLI test generally had normal values for the DGGR lipase assay, and patients with increased values for the PLI test generally also had increased values for the DGGR lipase assay. These preliminary studies suggest that results of the DGGR lipase and PLI assays will likely result in similar clinical interpretations.

Pancreatitis Information

Just as the PLI test is not completely specific for pancreatitis, the DGGR lipase assay is expected to have limitations. An increased PLI result increases the likelihood of pancreatitis, but is not absolutely diagnostic for pancreatitis. Other disorders may increase the PLI concentration, including hyperadrenocorticism in dogs. As such, it is critical for proper interpretation that tested patients have clinical signs, history, and other findings (e.g., imaging) consistent with/suspicious for pancreatitis. Patients with no clinical suspicion of pancreatitis and an increased DGGR lipase value should not be presumed to have pancreatitis. Sensitivity and specificity of the DGGR lipase assay for diagnosing pancreatitis have not been well studied; however, good correlation with the PLI assay suggests the DGGR method is better than the older lipase assay in screening for pancreatitis.

Reference Ranges

Preliminary values for interpretation of DGGR lipase (taken from published literature):

CATS	DOGS
Normal: ≤ 26 U/L	Normal: ≤ 108 U/L
Increased: > 26 U/L	Inconclusive: 109-216 U/L
	Increased: > 216 U/L

REFERENCES:

Graca, R. et. al. Validation and diagnostic efficacy of a lipase assay using the substrate 1,2-o-dilaruyl-rac-glycero glutaric acid-(6'methyl resorufin)-ester for the diagnosis of acute pancreatitis in dogs. *Vet Clin Path.* 2005;34:39-43.

Kook, P.H. et. al. Agreement of serum spec cPL with the 1,2-o-dilauryl-rac-glycero-glutaric acid-(6'-methylresorufin) ester (DGGR) lipase assay and with pancreatic ultrasonography in dogs with suspected pancreatitis. *J Vet Intern Med.* 2014;28:863-870.

Mawby, D.I. et. al. Canine pancreatic-specific lipase concentrations in clinically healthy dogs and dogs with naturally occurring hyperadrenocorticism. *J Vet Intern Med.* 2014;28:1244-1250.

Oppliger, S. et. al. Agreement of the serum spec fPLTM and 1,2-o-dilarutyl-rac-glycero-3-glutaric acid-(6'-methylresorufin) ester lipase assay for the determination of serum lipase in cats with suspicion of pancreatitis. *J Vet Intern Med.* 2013;27:1077-1082.

PANCREATITIS
Common Clinical Signs

Clinical signs of pancreatitis are variable and may range from mild partial anorexia to cardiovascular shock and disseminated intravascular coagulation (DIC).

SIGNS IN CATS:

- Lethargy
- Complete or partial anorexia
- Abdominal pain
- Vomiting, weight loss, and diarrhea are less common in cats

SIGNS IN DOGS:

- Vomiting
- Abdominal Pain
- Anorexia
- Lethargy
- Weakness
- Icterus
- Fever or hypothermia

CLINICAL PATHOLOGY LABORATORY | 865-974-5605

vetmed.tennessee.edu

UTCVM INSTITUTE OF AGRICULTURE THE UNIVERSITY OF TENNESSEE

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