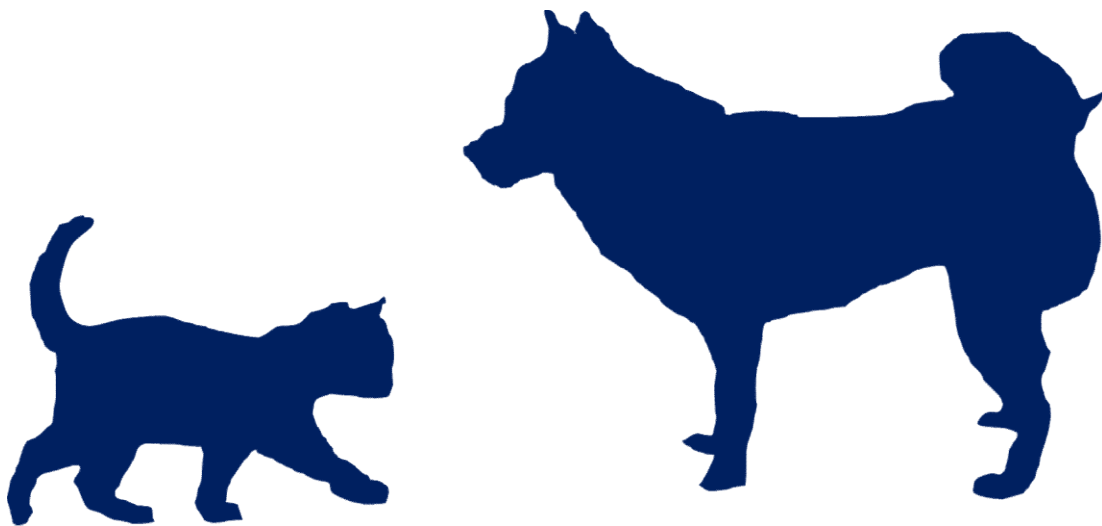


**LipoSEARCH®** is a cutting edge “lipoprotein profiling service” based on a GP-HPLC followed by a unique data analysis algorithm (patented).

**LipoSEARCH® – Features & Benefits –**

- ◆ Require only a small amount of serum/plasma
- ◆ No need of sample pretreatment
- ◆ Any animal species of sample is applicable
- ◆ Provide detailed lipoprotein profiling data
- ◆ Can be identified lipoprotein fractions and lipids on which drug acts

The service has been used in a broad range of research fields, such as medical, pharmacology, nutrition, veterinary medicine, and over 550 scientific papers have been published. Here are some papers in veterinary research which **LipoSEARCH®** has been used.



Analysis of lipoprotein profiles of healthy cats by gel-permeation high-performance liquid chromatography

Hisashi Mizutani et al

*J Vet Med Sci.* 2016 Sep 1;78(8):1277-81.



Many of the lipid metabolism abnormalities observed in cats are caused by endocrine diseases, such as diabetes. Furthermore, congenital anomalies with hyperlipidemia, such as LPL deficiency have also been reported in cats.

In this paper, lipoprotein profiling based on GP-HPLC (**LipoSEARCH®**) and density gradient ultracentrifugation (DGUC) was compared to obtain feline lipoprotein profiles. As a result, it was demonstrated the utility of assessing with **LipoSEARCH®**, while DGUC is not capable of accurate separation. The lipoprotein profiles in healthy cats showed large and small peaks, which corresponded to HDL and LDL respectively, whereas VLDL and CM were only marginally detected. It is concluded that **LipoSEARCH®** is a useful method for research and diagnosis of dyslipidemia in cats which can obtain accurate lipoprotein profiles by a small sample volume.

Lipoprotein cholesterol and triglyceride concentrations associated with dog body condition score; effect of recommended fasting duration on sample concentrations in Japanese private clinics

Shiho Usui et al

*J Vet Med Sci.* 2015 Sep;77(9):1063-9.



The objectives of this study were to survey clinics' guidance about recommended fasting duration (FD) prior to lipoprotein analysis, and to characterize lipoprotein cholesterol and triglyceride (TG) concentrations in obese and overweight dogs categorized on the basis of the 5-point body condition score (BCS) scale. A dataset was created from lipoprotein analysis (by *LipoSEARCH*<sup>®</sup>) medical records of 1,538 dogs from 75 breeds in 354 clinics from 2012 to 2013. Approximately 51% of the clinics recommended more than 12hr FD before taking a serum sample for lipoprotein analysis and the result tended to lower CM-TG concentrations compared to the than dogs with less than 12hr FD. Furthermore, the lipoprotein cholesterol and triglyceride concentrations were highly associated with physiologic factors, such as age, breed body size, sex and neuter status. Therefore, it is necessary for veterinarians to consider of these factors when interpret lipoprotein lipid concentrations in their patient dogs.

LC-MS/MS analysis of canine lipoproteins fractionated using the ultracentrifugation-precipitation method

Asuka Suto et al

*J Vet Med Sci.* 2013 Nov;75(11):1471-7.



This study compared ultracentrifugation-precipitation (U-P) method and GP-HPLC (*LipoSEARCH*<sup>®</sup>) for measure HDL and LDL in canine since there is no gold standard method for canine lipoprotein analysis. The two methods showed close correlation, however the canine HDL-C concentration by the U-P method was lower than *LipoSEARCH*<sup>®</sup>, and the canine LDL-C concentration by the U-P method was higher than *LipoSEARCH*<sup>®</sup>. The results of LC-MS/MS analysis of the HDL and LDL fractions separated by the U-P method showed that HDL fraction contains only ApoA1 and LDL fraction contains both ApoA1 and ApoB. It is suggested that some of the canine HDL could be precipitated with LDL in heparin manganese chloride solution.

Clinofibrate improved canine lipid metabolism in some but not all breeds

Yohtaro Sato et al

*J Vet Med Sci.* 2018 Jun 29;80(6):945-949.



In this study, medical records of 306 dogs were collected and epidemiologic analyses were performed to evaluate the efficacy of Clinofibrate (CF) treatment in improving canine lipid metabolism and whether the efficacy was influenced by canine characteristics. As the results of lipoprotein analysis by *LipoSEARCH*<sup>®</sup>, CF treatment significantly reduced all lipoproteins lipid levels, especially VLDL-TG concentration (mean reduction rate=54.82%). However, 17.65% of the dogs were drug refractory in relation to TG concentrations, and toy poodles were less CF responsive than other breeds (OR=5.36, 95% CI=2.07-13.90). Genetic factors may have an effect on CF response, so genetic studies on lipid metabolism-related genes might be important to identify variations in CF efficacy.

Influence of  $\delta$ -Amino levulinic acid on body fat, body weight, and blood property in diet induced obese dogs

Yuki Ozawa et al

*J Pet Anim Nutr.* 2016 Volume 18 Issue 1 Pages 18-24.



$\delta$ -Amino levulinic acid (ALA) is the first compound in the porphyrin synthesis pathway and is involved in many biochemical reactions. ALA has been reported to improve energy metabolism and to inhibit accumulation of intra-abdominal fat in rats. This study demonstrated whether ALA supplementation show the same fat preventative/reductive capacity in diet induced obese dogs. It was suggested that the ALA supplementation led to decreasing of fat-digestion-rate in diet. In addition, it was hypothesized that ALA supplementation increased basal metabolic rate in diet obese dogs, increased the rate of fatty acid beta-oxidation with availability of increased disposable levels of mitochondrial produces ATP.

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This service is for research purposes only.

It cannot be used for clinical diagnostic purposes.

Information



Video



Method

