GLOBAL NEWS

Clinical validation of a next-generation sequencing-based multi-cancer early detection "liquid biopsy" blood test

PLOS One, April 26th 2022

Veterinarians can now benefit from a new tool able to assist in early detection and diagnosis of 30 types of canine cancer. A novel, NGS (next-generation sequencing)-based MCED (multi-cancer early detection) liquid biopsy test has demonstrated the ability to identify cancer-associated genomic alterations in canine patients representing a wide spectrum of cancer types. The study was performed on blood samples collected prospectively from more than 1,000 client-owned dogs at more than 40 clinical sites. The test was able to detect 30 different types of canine cancer, with a sensitivity of 85.4 percent for three of the most aggressive types (lymphoma, hemangiosarcoma, and osteosarcoma) and an overall sensitivity of 54.7% at a specificity of 98.5%. Further studies are underway to support the application of the test in additional use cases, including minimal residual disease detection, recurrence monitoring, treatment response monitoring, and targeted treatment selection.

Reducing height of scale in dog working trials may help reduce potential impact on joints

Frontiers in Veterinary Science, April 27th 2022

Canine welfare experts examined how attempting the scale at various heights impacted dogs' landing forces and the joint angles of their paws and shoulders. Working trials is a canine discipline and competitive activity that originated from police and military dog work but has seen little modification. Trials require dog and handler to undertake a number of tasks around scent work, obedience and agility—which includes clearing a 6-foot scale and a 9-foot-long jump. The scale obstacle is considered particularly physically demanding for dogs, which are required to climb from a static start on the ground to scale the obstacle and land in a controlled manner. As part of the study, handlers were asked to work their dogs at three different heights, ranging from 5 feet to 6 feet. The team found that when the scale height was lowered to 5' 6" dogs had a reduced "peak vertical landing force" and less compressed joint angles upon landing. When it was lowered further to 5 feet, dogs altered their traversing style, jumping rather than scaling, and greater compression and increased peak vertical landing force was seen. The study showed a degree of variation among the dogs, possibly related to factors such as size, breed, age, training and experience. Potential concern has been raised in other canine disciplines that landing forces after traversing jumps may lead to soft tissue injuries in dogs.

VIVALDIS CORNER

Oncology Training Modules in Small Animal Practice

Under the Vivaldis Knowledge Exchange Program, the first session of 2022 - Oncology training module by Dr.Noopur Desai which began on February 1st week was successfully completed in the month of May. The live training sessions which were held every Tuesday covered various topics on how to approach a pet with cancer, different modalities for cancer treatment, appropriate use of chemotherapy, common tumor types, case discussions etc. Participants were benefitted from the session and has helped change their approach towards cancer treatment. Vivaldis has more programs planned for this year, details of which will be shared soon.

STUDY

Antifbrogenic and apoptotic effects of Ocoxin in cultured rat hepatic stellate cells

(Journal of Physiology and Biochemistry, March 2022)

Ocoxin is a nutritional supplement that has been shown to exert antioxidant and immunomodulatory responses in patients with chronic hepatitis C. The present work aimed to determine the efects of Ocoxin on activated hepatic stellate cells (HSC), the cell type mainly responsible for collagen deposition in the fbrotic liver. Ocoxin was found to reduce the survival of a cell line of immortalized non-tumoral rat HSC in a dose–response fashion and to diminish collagen type I levels. This latter effect was observed even at doses not afecting cell survival, pointing to an antifbrogenic action for the supplement. The decrease in viability exerted by Ocoxin on HSC correlated with an increase in histone-associated fragments in the cytoplasm and with increased activity of caspase-3, indicating the induction of apoptosis. To determine the molecular mechanisms mediating Ocoxin-induced apoptosis, the activation of members of the MAPK family was analyzed. Incubation of HSC with Ocoxin caused a transient and dramatic enhancement on ERK, JNK, and p38 MAPK phosphorylation levels. Using specifc inhibitors for these enzymes, p38 MAPK was identifed as a key mediator of the apoptotic efect of Ocoxin on HSC

VIVALDIS Animal Health
Vivaldis Health & Foods Pvt. Ltd.
Office No. 803/804, Clover Hills Plaza, NIBM Road, Pune- 411048, Maharashtra, India.
Help-line No.: +91 7767922244 | Email : info@vivaldis.co.in | Website : www.vivaldis.co.in

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