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Metabolic Assessment to Diagnose Equine Neuroaxonal Dystrophy (eNAD)/ Equine Degenerative Myeloencephalopathy (EDM)

Tech ID: 32197 / UC Case 2018-929-0

ABSTRACT

Researchers at the University of California, Davis have developed a protocol and assay to assess the rate of metabolism of vitamin E in horses that serves as a potential diagnostic test for equine neuroaxonal dystrophy (eNAD) and equine degenerative myeloencephalopathy (EDM).

FULL DESCRIPTION

Equine neuroaxonal dystrophy (eNAD) is a central nervous system disease that results in the degeneration of parts of the brainstem in young horses. A more severe form of eNAD, Equine degenerative myeloencephalopathy (EDM), also affects the spinal cord; the only difference between these disorders is the location of axonal degeneration within the central nervous system. These diseases are characterized by symmetrical ataxia, abnormal base-wide stance at rest, and hypermetria of the limbs. Affected foals often have low serum vitamin E concentrations. ENAD appears to have a genetic basis, with clinical expression in genetically predisposed foals being influenced by dietary vitamin E. ENAD/EDM is the second most prevalent neurological disease in horses; however, a definitive diagnosis is only currently available via necropsy after euthanasia. While there is no treatment for eNAD/EDM once a horse is over 2 years of age, achieving an antemortem diagnosis for this disease would greatly benefit the equine industry.

Researchers at the University of California, Davis have developed a protocol and assay to assess the rate of metabolism of vitamin E in horses that serves as a potential diagnostic test for eNAD/EDM. By comparing the assessed rate of metabolism of vitamin E to a healthy baseline, an antemortem diagnosis for eNAD/EDM can be procured. This test would provide owners and veterinarians with the ability to diagnose horses while still alive and make informed decisions regarding breeding or euthanasia.

APPLICATIONS

- Antemortem diagnostic test for eNAD/EDM

FEATURES/BENEFITS

- Diagnose horses with eNAD/EDM while still alive
- Assayed samples may be serum, plasma or urine
- In some instances, samples used in analysis may be collected within 48 hours or less

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20210270852	09/02/2021	2018-929
Patent Cooperation Treaty	Published Application	WO 2019/241411	12/19/2019	2018-929

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OTHER INFORMATION

KEYWORDS

Neuroaxonal dystrophy,
NAD, Equine neuroaxonal
dystrophy, eNAD, Equine
degenerative
myeloencephalopathy,
EDM, Vitamin E deficiency,
Hypermetria, Horse

CATEGORIZED AS

- **Agriculture & Animal Science**
 - Animal Science
- **Veterinary**
 - Diagnostics
 - Large Animal

RELATED CASES

2018-929-0

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