

Equine Lymphoma Report



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PATIENT NAME: Kobe Martin	MRN: 1072566	VETERINARIAN:
SPECIMEN ID: 555555	DRAW DATE: 2-Sep-21	FACILITY:
SPECIES: Equine	RECEIVED DATE: 3-Sep-21	
GENDER: Male Neutered	REPORT DATE: 3-Sep-21	
AGE: 20.0	SAMPLE TYPE: Frozen Serum	PH:
WEIGHT: 500 kg		FAX:
BREED: Arabian		

Thymidine Kinase

TEST NAME	RESULT	UNITS	Flag	Reference Intervals
TK1 <i>Thymidine Kinase Type 1</i>	18.0	U/L	H	Normal: ≤3.3 U/L High: >3.3 U/L

General Comments

In clinically normal horses, TK1 has a mean value of 2.7 U/L with the upper end of the reference interval at 3.3 U/L. Horses with lymphoma have a very wide variation ranging from normal to over 100 U/L with a median value of 26 U/L. Sensitivity and specificity at the cutoff is 74% and 88% respectively. As TK1 values increase above the cutoff, specificity increases.

It is recommended that the test be used in conjunction with other clinical information for a lymphoma diagnosis. In cases that are suspect, serial measurements are useful as TK1 values increase over time as the tumor burden increases. Serial measurement intervals of 3-4 weeks are recommended in those instances.

With successful therapy TK1 will decline back to normal. With ineffective therapy, TK1 may initially decline and then elevate. Disease recurrence can be detected by monitoring TK1 over time. Testing intervals of 1-2 months is recommended.

Thymidine kinase, type 1 (TK1), is a cellular enzyme involved in the synthesis of DNA precursors and is upregulated in dysregulated cell growth – a hallmark of cancer. TK1 levels have been shown in numerous studies, both in humans as well as animals, to correlate to the proliferative activity of tumor disease.

TK1 has been found to be a useful for the diagnosis and therapeutic management of equine lymphoma (1). Since TK1 correlates to tumor proliferation, higher values are seen in lymphoma with a higher overall tumor burden and higher grade. Conversely, with successful therapy, TK1 will decline as tumor declines.

1. Larsdotter S, Nostell K, von Euler H, Serum thymidine kinase activity in clinically healthy and diseased horses: A potential marker for lymphoma, *Vet J* (2015) 313-316. <https://doi.org/10.1016/j.tvjl.2015.01.019>

Tech: RR