

EquiChek™-SAA – Be Sure, EquiChek It!

EquiChek™-SAA

EquiChek™-SAA is a rapid test to assess the immune health status of the horse that is easy to use and simple to interpret. With just a pin prick of blood you can detect and track acute inflammatory conditions in less than 10 minutes.

Serum Amyloid A – How it Works

Serum Amyloid A (SAA) is a major acute phase protein of inflammation in horses. The use of SAA to aid diagnosis of equine conditions is well documented^{1,2,3}. Very low levels are seen in normal healthy conditions, but levels increase within hours of a problem to 100-1000-fold above normal. The rise in SAA during an inflammatory response is much clearer than other commonly used markers such as fibrinogen.

SAA increases are high and rapid allowing for a more reliable assessment of the inflammatory condition of the horse. A significant advantage of SAA is the rapid fall in levels to normality following successful intervention, giving a clear signal of recovery.

Applications*

EquiChek™-SAA is a useful diagnostic support tool for assessing general health and wellness of the horse. An elevated level is a clear indication of an underlying pathology. Typical applications include:

- Confirming the presence of an active systemic inflammatory condition.
- Detection of sub – clinical inflammation where there is a suspicion something is wrong.
- Detection of infection.
- Real time monitoring of recovery of disease activity
- Monitoring health status before an event
- An indicator to prompt for more detailed diagnostic testing.

Interpretation of Results



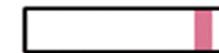
4 Lines
< 20 µg/ml



3 Lines
20 – 75 µg/ml



2 Lines
75 - 200 µg/ml



1 Line
> 200 µg/ml



*A definitive clinical diagnosis should only be made after all clinical and laboratory findings have been considered.

Technical Data

- Sample type: Whole blood (serum or plasma can also be used although the test is designed to avoid the necessity for blood separation).
- Sample volume: 5 µl of whole blood or 3 µl of serum or plasma.
- Test time: Results are visible in as little as 2-3 minutes although the recommended test time is 10 minutes. The more familiar you become with the test, you can see results appearing as the test is still running.
- Measuring range: EquiChek™-SAA will detect SAA in the range 0-200 µg/ml.
- Absence of false positives: Unlike other rapid tests there is no possibility of any false low results. With EquiChek™-SAA, when its low, you know for sure it is low.

Sensitivity and Specificity Data

Serum samples were collected from 112 horses referred to a hospital based veterinary clinic. Serum Amyloid A samples were analyzed on the Eiken SAA test and all samples were run on the EquiChek™-SAA test.

- Sensitivity: 96.6 %
- Specificity: 96.4 %
- Accuracy: 96.4 %

Fibrinogen vs SAA in Assessment of Inflammation

Fibrinogen has long been the traditional marker of inflammation in horses and has been used either alone or in conjunction with white blood cells. However, in recent years Serum Amyloid A (SAA) has started to gain traction as an alternative indicator of inflammation and with good reason.

The data presented in the diagrams show the clear difference between SAA levels in normal horses (no inflammation or infection) and those in horses with a variety of inflammatory conditions. In contrast to equine SAA, the levels of both fibrinogen and white blood cells are more ambiguous, showing considerable overlap and no clear indication of the inflammatory status. In addition, clinically significant levels of SAA were detected in three apparently healthy horses that went on to develop clinical conditions within 24 hours. Neither white blood cells nor fibrinogen were raised⁴.

References

1. Assessment of Serum Amyloid A testing and its clinical application in a specialized equine practice. In press JAVMA 2013.
2. Dynamics in serum of the inflammatory markers Serum Amyloid A, haptoglobin, fibrinogen and alpha 2 globulins during induced non-infectious arthritis in the horse. Equine Vet J, 34: 699-704, 2002.
3. Blood proteins and inflammation in the horse. Vet Clin of North America; Equine Practice 24;285-297, 2008.
4. Assessment of serum amyloid A testing of horses and its clinical application in a specialized equine hospital. J Am Vet Med Assoc 2013; 243:113-119.,

Data Showing the Benefits of using SAA in Comparison to White Blood Cells and Fibrinogen⁴.

Fig 1- White Blood Cells

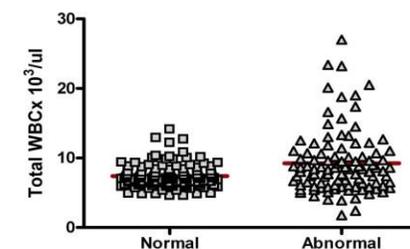


Fig 2- Fibrinogen

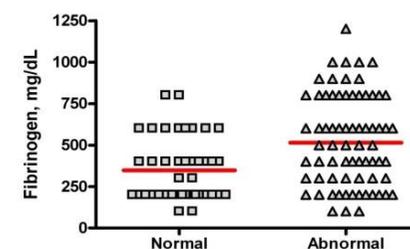


Fig 3 – Serum Amyloid A

