InSight Equine-IA eACTH Evaluation
vs. Tosoh AIA-CL Series

The InSight Equine-IA is an easy to use Veterinary Immunoassay Analyser providing accurate and reliable results in 3-15 minutes. The InSight Equine-IA uses immunofluorescence technology for accurate results. A competitive binding assay is based upon the competition of labelled and unlabelled analytes for a limited number of antibody binding sites. Unbound antibodies and immunocomplexes migrate alongthe nitrocellulose membrane towards the test line. The unbound antibodies are then captured by antigens immobilised on the test line. The fluorescent signal intensity reflects the amount of analytes captured and is measured by the InSight Equine-IA.

Equine ACTH

Intermediate pituitary dysfunction (PPID) is a common equine hormonal disorder that affects 20% of adult horses. This disease is caused by degeneration of dopaminergic neurons in the hypothalamus, resulting in hormone-secreting adenomas or intermediate hyperplasia of the pituitary gland. As corticotropin is the most easily measured hormone originating in the middle, and its concentration correlates well with clinical symptoms, detecting increased plasma concentrations of corticotropin is the most common way to identify cases of PPID or confirm clinical suspicions of PPID

Comparison Items

InSight Equine-IA:
Test Item – Equine ACTH
Sample Type – Fresh Equine Serum
Quantity of Samples – 45 Tests
Instrument – InSight Equine-IA Veterinary Immunoassay Analyser

Gangzhumed:
Test Item – ACTH
Sample Type – Fresh Equine Serum
Quantity of Samples – 45 Tests
Instrument – Tosoh AIA-CL Series

Results

eACTH		Tosoh		
		Positive	Negative	Total
InSight Equine-IA	Positive	15	1	16
	Negative	1	28	29
	Total	16	29	45

Positive Coincidence Rate	93.8%
Negative Coincidence Rate	96.6%
Total Coincidence Rate	95.6%

InSight Equine-IA Equine ACTH Reference Range

Detection Range: 1.0-2000 pg/mL (0.220-440 pmol/L)

Reference Range (Other Seasons):

Reference	pg/mL	pmol/L
Normal	<25	<5.5
Abnormal	>25	>5.5

Reference Range (Autumn):

Reference	pg/mL	pmol/L
Normal	<75	<16.7
Abnormal	>75	>16.7

Sample	InSight Equine-IA (pg/mL)	Vcheck (pg/mL)
1	225.64	250.23
2	350.17	410.38
3	14.18	3.64
4	20.86	44.00
5	686.82	784.50
6	15.22	17.25
7	140.55	250.23
8	1802.47	2264.00
9	11.34	3.31
10	1456.57	1730.61
11	35.41	15.91
12	13.00	18.64
13	12.50	18.64
14	101.24	110.32
15	7.17	14.21
16	27.36	44.00
17	51.47	53.46
18	10.35	13.02
19	7.74	9.53
20	45	49.95
21	29.53	53.12
22	17.44	7.59
23	21.94	13.65
24	11.39	10.33
25	17.90	20.89
26	19.23	9.45
27	18.55	9.82
28	22.81	15.81
29	15.28	23.50
30	8.78	6.83
31	319.37	309.69
32	4.19	14.26
33	18.16	15.03
34	7.77	0.00

35	14.25	6.31
36	8.75	3.66
37	9.37	17.85
38	438.26	524.32
39	20.37	16.31
40	7.35	5.42
41	30.21	22.13
42	22.05	23.60
43	12.28	16.39
44	18.02	16.54
45	9.55	12.21

Sample Concentration	1	2	3	4	5	6	7	8	9	10	Mean Value	Bias%
10 pg/mL	10.91	11.28	9.47	10.08	10.78	10.92	10.86	11.3	10.77	10.57	10.69	7%
50 pg/mL	53.55	49.39	52.91	55.07	52.06	45.63	55.29	50.62	56.35	56.91	52.78	6%
250 pg/mL	274.85	221.98	224.36	238.51	254.79	224.65	222.73	226.02	275.39	266.49	242.98	-3%

Conclusion

Based on comparative analysis, the total coincidence rate of InSight Equine-IA Equine ACTH Rapid Quantitative Test Kit and Tosoh AIA-CL Series is as high as 93.8%, indicating that the InSight Equine-IA reagent is comparable to the Tosoh AIA-CL Series Test Kit.