

Laboratory Evaluation of InSight MS Veterinary Urine Test Strips

1. Clinical Evaluation

i) Method comparison for the InSight MS Urine test strip evaluation

Results from a total of 50 Veterinary Urine samples (urine was processed within 4 hours) were compared with the VET 10 (TECO) test strips. The strips have 10 test pads for leucocytes, nitrite, pH, protein, glucose, ketone bodies, urobilinogen, bilirubin, blood and specific gravity. Results that overlap one step higher or lower at the borderline concentrations are considered as being in agreement.

ii) Results

Tables 1 - 11 summarise the results of the method comparison between InSight MS Test Strips and VET 10. The highlighted areas denote results which were in agreement for both methods.

Blood/ erythrocytes Vet 10 (TECO)	InSight Test Strips				
	10 ⁵ /l	neg	ca. 10	ca.50	ca.250
10 ⁵ /l	neg	35	1		
	ca. 10		4	2	
	ca.50		1	2	1
	ca.250				4
Chamber counting sum: 50	0-5	6-20	21-150	>150	
Agreement: 90%					

Table 1

Urobilinogen Vet 10 (TECO)	InSight Test Strips				
	mg/dl	norm.	2	4	8
mg/dl	norm.	48	1		
	2		1		
	4				
	8				
	12				
Sum: 50					
Agreement: 99%					

Table 2

Bilirubin	InSight Test Strips			
Vet 10 (TECO)				
mg/dl	neg.	+	++	+++
neg.	47	1		
+		1	1	
++				
+++				
Sum: 50				
Agreement: 96%				

Table 3

Protein	InSight Test Strips					
Vet 10 (TECO)						
mg/dl	neg.	+/-	1+	2+	3+	4+
neg.	35	1				
+/-	2	5	2			
1+		2	2			
2+			1			
3+						
4+						
Sum: 50						
Agreement: 84%						

Table 4

Nitrite	InSight Test Strips	
Vet 10 (TECO)		
	neg.	pos
neg.	45	
pos		5
Sum: 50		
Agreement: 100%		

Table 5

Leucocytes	InSight Test Strips			
Vet 10 (TECO)				
10 ⁶ /l	neg.	ca.25	ca.75	ca.500
neg.	37	3	1	
ca.25	2	5	1	
ca.75		2		
ca.125				
ca.500				
Chamber Count	0-19	20-50	51-250	>250
Sum: 50				
Agreement: 84%				

Table 6

Tel: +44 (0)1204 669033
 Fax: +44(0)1204 669034
 Email: sales@woodleyequipment.com
 Web: www.woodleyequipment.com

WOODLEY
 EQUIPMENT COMPANY LTD.

OLD STATION PARK BUILDINGS, ST. JOHNS STREET, HORWICH, BOLTON, LANCASHIRE, BL6 7NY, UK

Glucose		InSight Test Strips				
Vet 10 (TECO)						
mg/dl	neg.	+/-	1+	2+	3+	
neg.	35	1				
+/-	1	7	2			
1+		2	2			
2+						
3+						
Sum: 50						
Agreement: 88%						

Table 7

pH		InSight Test Strips						
Vet 10 (TECO)								
PH	5	6	6.5	7	8	9		
5	9	1						
5.5	3	9	1					
6		6	7					
6.5		2	2	1				
7			4	3				
7.5				2				
8								
8.5								
9								
Sum: 50								
Agreement: 68%								
±1 degree included concordant: 96%								

Table 8

Ketone bodies		Insight Test Strips				
Vet 10 (TECO)						
mg/dl	neg.	+/-	+	++	+++	
neg.	40					
+/-	2	2	1			
1+		3	2			
2+						
3+						
Sum: 50						
Agreement: 88%						

Table 9

pH Vet 10 (TECO)	InSight Test Strips						
	1000	1010	1020	1030	1040	1050	1060
1000							
1010		3	3				
1020		2	4	2			
1030			2	5	4	2	
1040				3	6	6	
1050				1	4	3	
1060							
Sum: 50							
Agreement: 48%							
±1 degree included concordant: 94%							

Table 10

The majority of analytes display 80-95 % agreement (except pH and specific gravity). When results, which overlap at the borderline concentrations with variation of one set higher or lower than expected are taken into account, then agreement increases to 90-100%.

2. Imprecision

To determine the within run imprecision, five fresh urine samples of different concentrations were tested 20 times each.

i) Result

Results of within-run imprecision evaluation and the agreement of results (percentage) can be seen in Tab. 1. The 11 parameter evaluation represents results of three different urine samples (n=20). The imprecision of semi-quantitative methods cannot be determined by conventional statistical procedures. Within-run precision for leucocytes, glucose, protein, ketone bodies, pH, ascorbic acid, specific gravity can be regarded as good, as each of 20 measurements of three different urine pools fell in the same concentration block. In the case of erythrocytes, urobilinogen, bilirubin and nitrite, one of the urine samples gave results which overlapped two steps. This is also interpreted as being of good precision.

ii) Conclusion

The precision of the InSight MS Urine strips is deemed to be "good" to "very good". InSight MS Urine test strips evaluate the urine with high precision.

Parameter	Result in the same blocks (sum=60) agreement %
Blood	55/60 92%
Urobilinogen	60/60 100%
Bilirubin	60/60 100%
Protein	60/60 100%
Nitrite	60/60 100%
Ketones	60/60 100%
Ascorbic Acid	60/60 100%
Glucose	60/60 100%
pH	57/60 95%
Specific Gravity/ Density	52/60 87%
Leukocytes	58/60 95%

Tab 1 - Agreement % of imprecision