



focus on health

Rainbow Calf Scours

BIO K 288

5 devices - 4 pathogens



Strips for
detection of
Rotavirus,
Coronavirus,
E. coli F5 (K99) and
Cryptosporidium
in calf faeces



Distributed by:
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Bio-X Diagnostics is ISO 9001
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Neonatal gastro-enteritis (NNGE) still represents a major issue in calves below one month of age:

- Herd prevalence: > 25%
- Mortality rate: 2 to 10%
- In herd morbidity: from 15% to 50% in “problem herds”

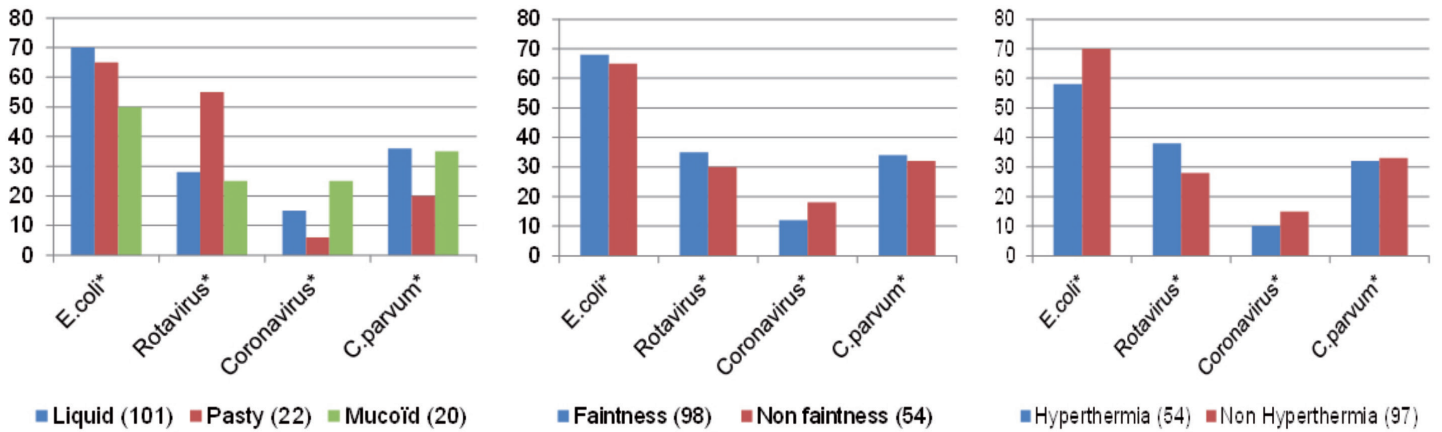
As a result, 20% of herds fall above admitted norm of 15% of calves undergoing a neonatal diarrhoea.

- NNGE are fundamentally a combination of:
- Environmental factors

- Lack of immunity
- Presence of an infectious agent/disbalance of the intestinal flora

Behind mortality, associated costs include impact on growth, treatment costs and, which must be considered, psychological impact on the farmer.

Clinical signs are not always pathognomonic, and can not easily discriminate between pathogens or their combinations as shown below (all criteria not significantly different at P=0.05, n=155)



Thus, using an on-site diagnostic assay can definitely change the veterinary approach of NNGE, not only at animal level, but typically at herd’s level, allowing collective measures (hygiene, management, feeding mode, adaptation of vaccination scheme etc...) to be taken.

RAINBOW™ Calf Scours offers today’s best option to sharpen a clinical diagnosis, and to eventually improve the decision of the practitioner, and its expected benefits:

- Within a very limited hands-on time (less than 1 minute), and read-out time (less than 10 minutes) as well as a very intuitive handling;
- For an affordable price;
- Whilst keeping high standards of quality: **RAINBOW™ Calf Scours** is validated against reference methods (sometimes gold standards), through significant cohorts of samples.

	+/+	+/-	-/+	-/-	KAPPA	
Rotavirus ELISA	48	0	2	40	96%	Excellent
Corona (PCR)	7	2	4	74	66%	Good
Corona (ELISA)	8	1	1	78	88%	Excellent
F5 (PCR)	19	1	4	62	85%	Excellent
F5 (ELISA)	18	1	2	65	90%	Excellent
Crypto (Ziehl)	32	3	2	63	89%	Excellent

Table 1: concordance of results between RAINBOW™ Calf Scours and reference methods using kappa factor (n=90)

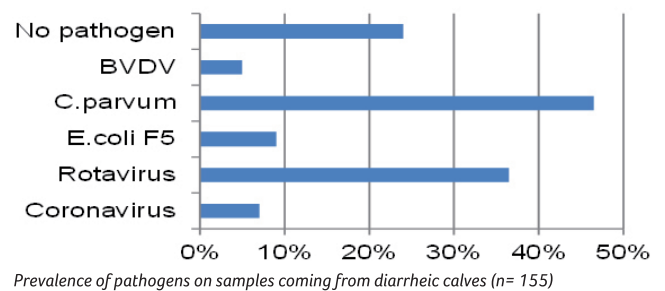
RAINBOW™ Calf Scours is a multiplexed assay, and displays various possible combinations:

- Major NNGE embedded pathogens
 - Rotavirus type A
 - Coronavirus (BCoV)
 - E.coli F5 (ETEC) (K99)
 - Cryptosporidium parvum
- Optional parameters can be added to standard panel:
 - Clostridium perfringens (semi quantitative strip)
 - NEW E.coli CS31A (see below performance validation data)

E.COLI CS31A: A SUSPICION OF PATHOGENICITY

CS31A E.coli is highly prevalent, found in 20% to 45% of diarrheic faeces samples of calves aged up to 4 weeks. In addition, it can affect calves from 6 days-old up to 3 weeks.

As a result, **CS31A E.coli is often associated with other highly prevalent pathogens**, such as rotavirus or Cryptosporidium parvum. This may lead to more complicated or severe clinical patterns.



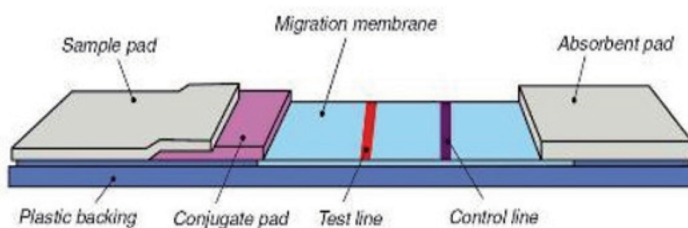
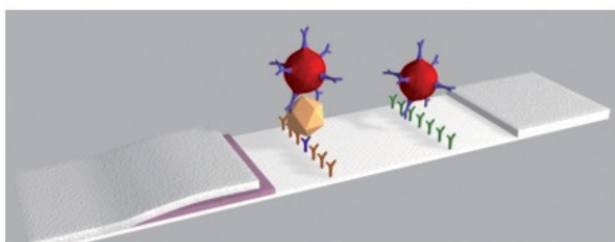
A comparison between MULSTISCREEN ELISA BIO K 366 and RAINBOW CS31A strip was made on a cohort of 138 stools coming from diarrheic calves aged up to 4 weeks.

		ELISA		
		POS	NEG	TOTAL
VFIA	POS	30	7	37
	NEG	1	100	101
	TOTAL	31	107	138


Prevalence of CS31A E.coli in this group was of 22.4%
 Relative Sensitivity of RAINBOW is 96.8%
 Relative Specificity of RAINBOW is 93.4%

RAINBOW™ CALF SCOURS: ABOUT THE PRODUCT

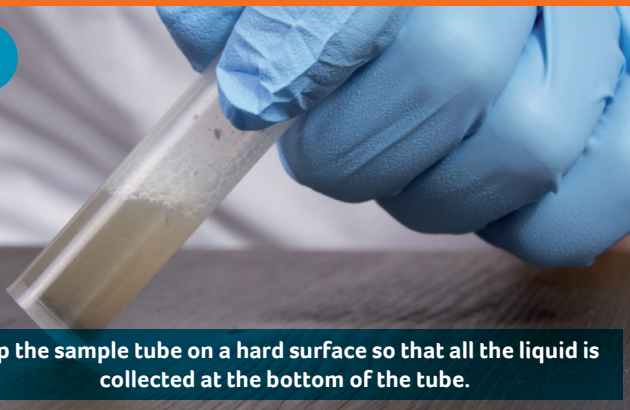
RAINBOW™ CalfScours strip is a vertical flow immunochromatographic device, where the antigen of interest is captured onto the membrane by a specific monoclonal antibody, whilst a second colloidal gold labelled antibody will allow the capture to be revealed.



HOW TO PROCEED

<p>1</p>  <p>Take the faeces directly from the rectum of the calf. If the samples are liquid, take a spoonful.</p>	<p>2</p>  <p>If faeces are solid, remove the excess amount using a spatula.</p>
<p>3</p>  <p>Dilute its content in the liquid of the small tube called sample tube.</p>	<p>4</p>  <p>Shake the sample tube to homogenize well.</p>

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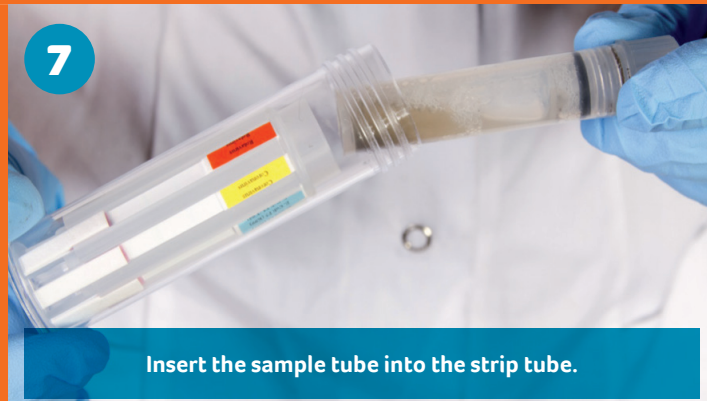
Tap the sample tube on a hard surface so that all the liquid is collected at the bottom of the tube.

6



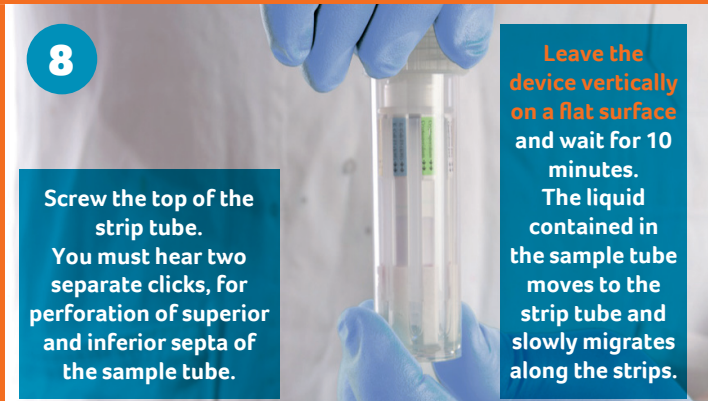
Tear the aluminium envelope open at the notch. Once the device has been taken out of the envelope its stability is of short duration, especially in a humid environment.

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Insert the sample tube into the strip tube.

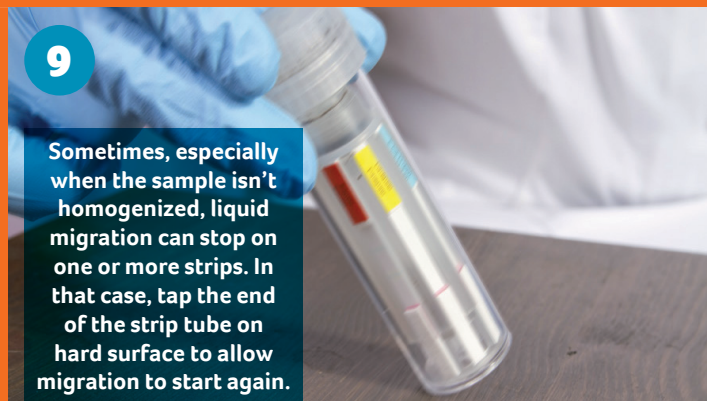
8



Screw the top of the strip tube. You must hear two separate clicks, for perforation of superior and inferior septa of the sample tube.

Leave the device vertically on a flat surface and wait for 10 minutes. The liquid contained in the sample tube moves to the strip tube and slowly migrates along the strips.

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Sometimes, especially when the sample isn't homogenized, liquid migration can stop on one or more strips. In that case, tap the end of the strip tube on hard surface to allow migration to start again.

10



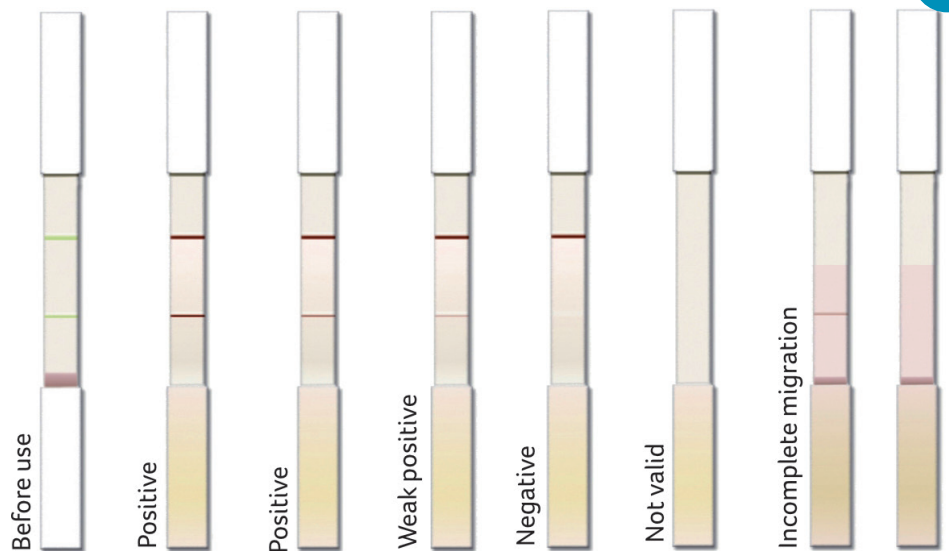
After 10 minutes, read the results using picture 11 as standard.

Precautions for use

- Store kits in a dry place at room temperature.
- Wear gloves while carrying out the test.
- The analysed sample shouldn't be too concentrated. Do not prepare a sample volume greater than a spoonful.
- Dispose of the device in keeping with legislation on environment protection and management of biological waste.

1 line = negative

2 lines = positive



Rota Red Strip
Ecoli F5 Blue Strip

Corona Yellow Strip
Crypto Green Strip

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