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Veterinary haematology solutions

Haematology solutions for veterinary blood analysis

Single reagents

REF	Content	Instrument
H19220	- 1x 20 L Dialuent VET	DLB3 VET/ DLB5 VET
H19230	- 1x 5 L Diatergent VET	DLB3 VET/ DLB5 VET
H19240	- 1x 1.2 L Diadiff VET + MS Card	DLB5 VET
H19241	- 1x 1.2 L Diadiff VET + MS Card	DLB3 VET
H19260	- 1x 5 L Dialys-EO VET	DLB5 VET
H19140C	- 1x 0.25 L Rinse concentrate	DLB3 VET/ DLB5 VET

System packs

REF	Product name	Content	Instrument
H19271	DLB3 Pack 125V	- 1x 2,5 L Dialuent VET (Ref H19122) - 1x 500 mL Diatergent VET (Ref H19132) - 1x 250 mL Diadiff VET (Ref H19147) - 1x 500 mL Rinse (Ref H19142) - MS Card	DLB3 VET
H19272	DLB5 Pack 125V	- 1x 2,5 L Dialuent VET (Ref H19122) - 1x 500 mL Diatergent VET (Ref H19132) - 1x 250 mL Diadiff VET (Ref H19147) - 1x 2 L Rinse (Ref H19141) - 1x 500 ml Dialys-EO VET (Ref H19162) - MS Card	DLB3 VET/ DLB5 VET

For professional use only.

GENERAL INFORMATION

Method	Impedancemetry
Shelf life	3 years from date of production
Storage	+15-25 °C
No. of cycles	1000 for the single reagents and 125 for the packs

INTENDED USE

The solutions are dedicated for the 3-diff and 5-diff analysis of the veterinary blood.

Reagents needed for the 3-diff analysis:

- **Dialuent VET:** Isotonic diluting agent for the mechanical separation of the red cells/platelets from the white cells.
- **Diatergent VET:** Cleaning agent for the instruments DLB3 VET and DLB5 VET.
- **Diadiff VET:** Lysing agent for the haemolysis of red blood cells, the stabilisation of haemoglobin, and the nucleation of white blood cells with a view to their differentiation (lymphos, monos, granulos) in veterinary blood.
- **Rinse concentrate:** The solution rinses and desalinates the parts of the analyser that are in contact with a salt reactant such as the Dialuent VET, to keep the device clean.

- **Or: DLB3 Pack 125V:** ready to use pack with all above mentioned components for 3-diff measurements on DLB3 VET analyser.

Reagents needed to the 5-diff analysis:

- **All the mentioned reagents above**
- **Dialys-EO VET:** Lysing agent for the counting of eosinophilic leukocytes. It allows the counting of the white blood cell eosinophils.

- **Or: DLB5 Pack 125V:** ready to use pack with all above mentioned components for 5-diff and 3-diff measurements on DLB3 VET or DLB5 VET analyser.

DIAGNOSTIC SIGNIFICANCE

Haematology analysis can assess several health conditions involving blood and its components. Professional users can discover numerous diseases with the help of haematology measurements, like inflammation, anaemia, infection, haemophilia, blood-clotting disorders and leukaemia.

TEST PRINCIPLE

The combination of the haematology solutions with the DLB3 VET /DLB5 VET analysers allows cell-by-cell counting for each blood population, i.e. red blood, white blood and platelet populations.
The measurement is based on the principle of impedancemetry combined with cytochemistry (1). An electrical field is changed when a particle passes. Changes in conductivity are detected and recorded. Diadiff VET breaks the cytoplasmic membrane of red blood cells with the effect of eliminating the erythrocyte population, leaving only the leucocyte population. It also contains a nucleating agent allowing the volumetric separation of white blood cells in 3 sub-populations: lymphocytes, monocytes, and granulocytes.
Diadiff VET also contains a haemoglobin stabilizer. The haemoglobin measurement follows the Drabkin method (2) by a powerful haemoglobin reducer (Potassium Cyanide) with a reading at 540 nm.
Dialuent VET as the diluting agent makes it possible to perform two sequential dilutions performing a mechanical partition of the red cells/platelets and white cells. This mechanical separation is necessary in view of the different number of white and red cells (platelets). Diatergent VET is an active and passive cleaning agent that cleans the parts of the tanks and counting holes of the DLB3 VET /DLB5 VET analysers. It operates in two modes: as a detergent and as a proteolytic enzyme.
Dialys-EO VET breaks the cytoplasmic membrane of red blood cells and some white blood cells to leave only eosinophilic white blood cells for the 5-diff analysis.

REAGENT COMPOSITION

DIALUENT VET	**CONCENTRATION**
Anorganic salts, buffer	
EDTA	< 1 %
Dimethyl urea	< 1 %
Sodium fluoride	< 1 %
Preservative	

DIATERGENT VET	**CONCENTRATION**
Proteolytic enzyme	< 1 %
Nonionic detergent	< 1 %
Denatured alcohol	< 3 %
Dye	
Preservative	

DIADIFF VET	**CONCENTRATION**
Quaternary ammonium	< 3 %
Potassium cyanide	< 0.5 %
Preservative	

DIALYS-EO VET	**CONCENTRATION**
Phosphate buffer	< 1 %
Non-ionic detergent	< 1 %
Preservative	

RINSE CONCENTRATE
Distilled water
Preservative

MATERIAL REQUIRED BUT NOT PROVIDED

DLB3 VET /DLB5 VET haematology analyser, control blood.

REAGENT PREPARATION

Rinse Concentrate (single reagent):
Dilute 250 mL of the concentrate with distilled water to 10 L (40-fold dilution).
The other single reagents and the system packs are ready to use.

STORAGE AND STABILITY

Temperature: +15-25 °C
Keep away from direct sunlight and moisture.
Stability in unopened containers: 3 years from date of production (see expiration date on label)
Stability after opening: 16 weeks

WARNINGS AND PRECAUTIONS

For Diadiff VET and system packs:

H411: Toxic to aquatic life with long lasting effects
P102: Keep out of reach of children
P273: Avoid release to the environment
P391: Collect spillage
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

General for all solutions:

- Please refer to the safety data sheet and take the necessary precautions for the use of laboratory reagents.
- Please consider the reagent infectious and treat it according to current procedures.
- Follow all pre-analytical steps in the laboratory.
- Handle the reagents carefully to avoid bubbles.
- Do not use directly after transport or directly after handling.
- Reagents may cause irritation to eyes, skin and mucous membranes.
- In case of contact, rinse thoroughly with water and seek medical attention immediately.
- In case of accidental ingestion, call a doctor immediately!
- Prevent contamination of the reagent with particles or microorganisms.
- Do not use the reagent beyond the expiry date or beyond the open bottle time.
- Place the reagents next to the main unit of the device.
- Do not mix reagents of the same nature or batch.
- Do not reuse an empty container for risk distorting the results or damaging the machine.
- Do not use the product when the protective packaging is damaged.
- Do not use the product if there is any sign of deterioration (turbidity, colour change, etc.)
- For diagnostic purposes, the results should always be assessed together with the patient's medical history, clinical examinations and other findings.

SPECIMEN COLLECTION AND STORAGE

- Avoid any intensive aspiration when collecting the blood sample to avoid haemolysis, which can influence the results of the haematology analyser. Also reduce the sample collection time to avoid microcoagulation problems.
- The blood sample to be analysed should be collected in a collection tube containing EDTA K3 anticoagulant (3). The use of the sampling tube must be carried out according to the instructions of the supplier.
- A gentle and prolonged homogenization of the blood/anticoagulant mixture is essential before any analysis, according to the instructions of the supplier.
- It is recommended to carry out the analysis no earlier than 30 minutes and no later than 8 hours after collection.

TEST PROCEDURE

A detailed description of the installation/replacement of the reagents is available in the user manual of the relevant analyser.

INTERPRETATION OF RESULTS

For further information please see the manual of the used analyser.

QUALITY CONTROL AND CALIBRATION

We recommend to use the ©R&D haematology controls. The lot specific values and ranges are available on our website.

LIMITATIONS

Several substances can interfere with the results:

- Analgesic derivatives of procaine ester

- Medication with anticoagulant actions: Oral anticoagulants (antivitamin K, Antithrombin III and IV)
- High volume cortisone treatment
- High lactose serum
- Lipemic or haemolytic serum can also affect results

WASTE MANAGEMENT

Please refer to local legal requirements.

LITERATURE

1. Paterakis, George & LAOUTARIS, N.P. & ALEXIA, S.V. & SIOUROUNIS, P.V. & STAMULAKATOU, A.K. & PREMETIS, E.E. & SAKELLARIOU, Ch & TERZOGLOU, G.N. & Papassotiriou, Ioannis & Loukopoulos, Dimitris. (1994). The effect of red cell shape on the measurement of red cell volume. A proposed method for the comparative assessment of this effect among various haematology analysers. Clinical & Laboratory Haematology. 16. 235 - 245. 10.1111/j.1365-2257.1994.tb00416.x.
2. Al- Naemi, Amjad. (2018). Hemoglobin measurement Cyanmethemoglobin (HiCN) (Drabkin's Method). 10.13140/RG.2.2.36612.83845.
3. Goossens W, Van Duppen V, Verwilghen RL. K2- or K3- EDTA: the anticoagulant of choice in routine haematology? Clin Lab Haematol. 1991;13:291-295.

USED SYMBOLS

Symbol	Description
	Keep out of sunlight.
	Keep dry.
	Dispose of the tests and packaging appropriately
	Warning