

Optimizing platelet count in cats.

Blood sampling from a patient who is scared can be very hard. To add a communication barrier to this is of course not ideal, but this is what veterinarians face every day.

Besides the well-being of, and the difficulty to sample from the patient, the stress can also result in biological effects on blood cell population. Such a stress-related change can, for example, be platelet aggregation in cats.

This article summarizes tips and pointers on how to improve the platelet count in cats using the Exigo™ H400 veterinary hematology system.



System optimization

MPA-functionality

Compared to venous blood sampling, capillary blood sampling provides a less stressful experience for the animal and can therefore minimize stress-related effects on the blood cell populations – an important enabler for a reliable veterinary cell count. Capillary sampling also decreases the sample volume needed for analysis, which is especially important for small or dehydrated animals. The micro-pipette adapter (MPA) featured on the Exigo H400 enables a complete blood count (CBC)

from one drop of blood collected in a capillary sample tube – a functionality well suited for cats.

EDTA coated capillary tube

For the H400 system, Boule provides a high-precision EDTA capillary tube compatible with the MPA inlet. The high surface-to-volume ratio in the capillary tube ensures that a sufficient amount of EDTA is added to the blood sample, thus preventing clotting and enabling a more correct platelet count from the analyzer (Fig 1).

Aperture optimization

In general, small cells demand a higher sensitivity of the analyzer to be counted correctly. To allow accurate count of the smaller blood cells, the Exigo H400 is equipped with a narrower capillary aperture for the RBC and PLT count compared with human cell counters. The narrower aperture, with a diameter of 60 μm (Fig 2), allows for smaller corpuscles such as the PLTs and certain RBCs to be detected with a higher sensitivity compared to a standard instrument.



Fig 1. The MPA capillary sample feature of the Exigo H400 is especially suitable for smaller animals such as cats.

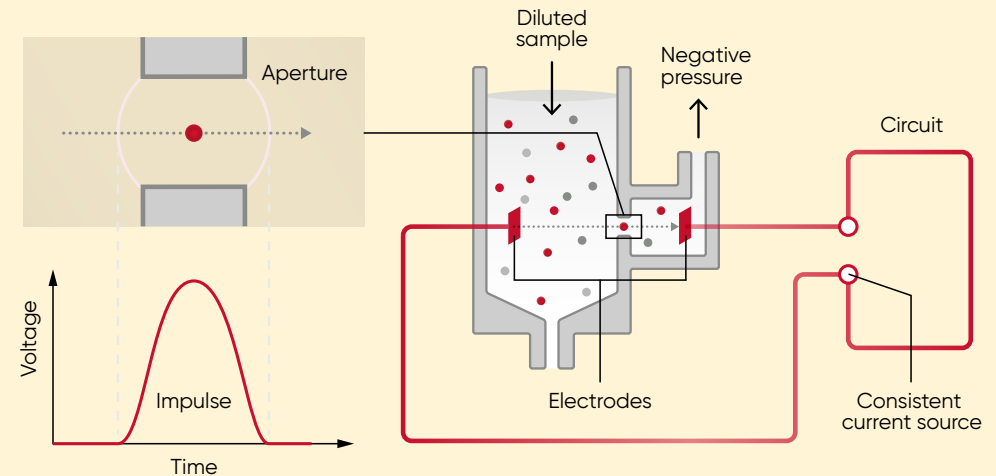


Fig 2. The Exigo H400 features a narrow capillary aperture of 60 μm , resulting in a sensitive system capable of counting the smaller blood cells. Each cell passing through the aperture causes a pulse in the electrical current. The number of generated pulses correlates with the number of cells, whereas the size of the pulse is related to the cell size.

Tips and pointers on hematology analysis for cats

Calm the cat by gently caressing it, while finding a suitable spot to prick. A good spot is usually in the ear of the animal, in the area between the vein and the outer edge, halfway up (Fig 3). Alternative sites can be the limbs, foot pads, or lips.

To allow for a good blood flow, massage and warm the site for skin puncture for 3–5 min. If using a heating pad, make sure the temperature does not exceed 40°C to prevent harming the animal.

Add a thin coat of Vaseline™ to the pricking-site to prevent blood from dispersing into the fur. Take a firm grip of the limb to be pricked. If pricking-site is on the ear, make sure to have a tissue/gauze as backing while performing the prick. Make a quick and firm puncture using an ultra-fine or fine tip lancet.

Wipe off the first drop of blood with a clean tissue. When the second drop forms, collect the blood

in a Boule plastic micropipette. Completely fill the micropipette and make sure there is no air trapped inside. Carefully wipe off any excess blood on the outside of the micropipette and place the filled micropipette into the MPA adapter.

Insert the adapter into the analyzer, an analysis cycle will automatically begin. Note! Samples should be analyzed immediately after collection, for optimal results, no longer than 10 min from collection.

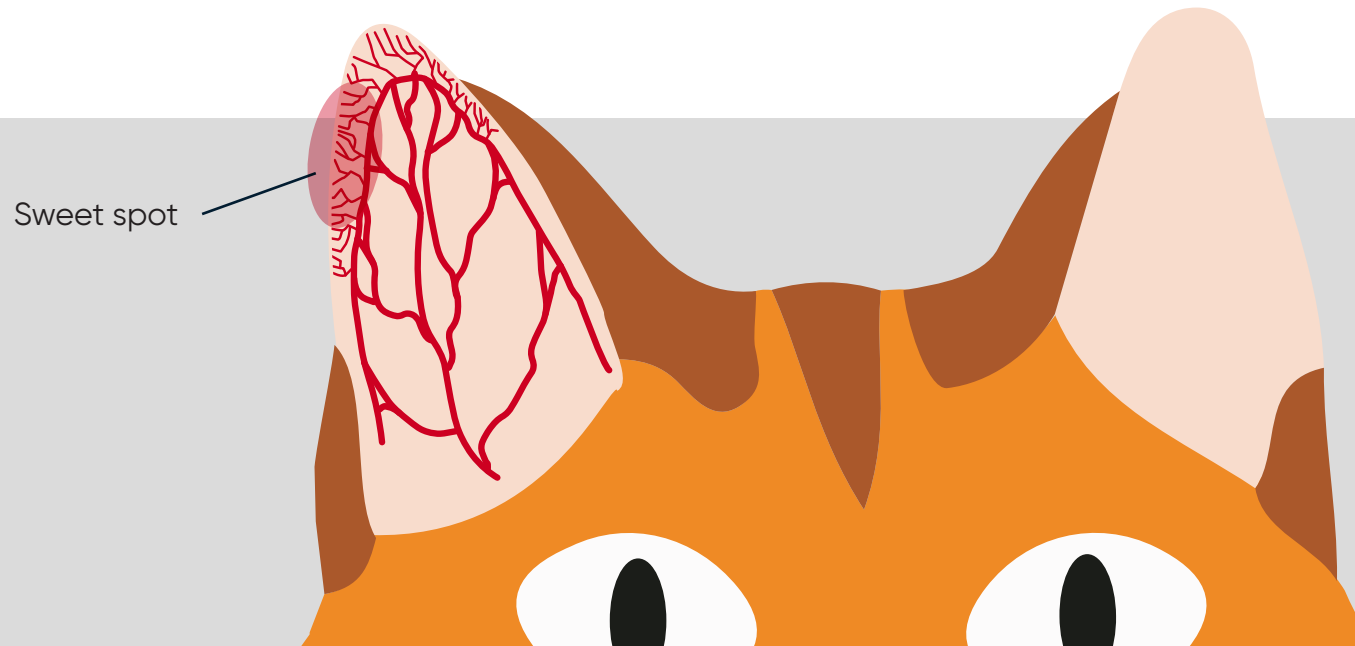


Fig 3. A suitable area for capillary blood sampling from a cat is the “sweet spot” on the ear.

Conclusion

To ensure an accurate platelet count in cats, consider the following:

Choose an instrument optimized for your needs – Exigo H400 features:

- MPA inlet for capillary blood sampling allows for a less stressful sampling method for the animal as well as a minimized sample volume, suitable for smaller animals such as cats.
- Capillary tubes, with maximized surface-to-volume ratio, are internally coated with EDTA to minimize possible clotting during collection.
- Narrow cell count aperture to increase the sensitivity when counting smaller corpuscles such as platelets.

Pointers for pre-analysis:

- Make sure the animal is calm and find a good pricking spot.
- Ensure a good blood flow through massaging and warming.
- Apply Vaseline to pricking area, to hinder the blood from dispersing into the fur.
- Make a firm and precise puncture with a fine lancet.
- Wipe away the first drop of blood, as this may contain debris from the puncture and interstitial fluid affecting the cell count.
- Perform the analysis without delay, for optimal results, no longer than 10 minutes after puncture.

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