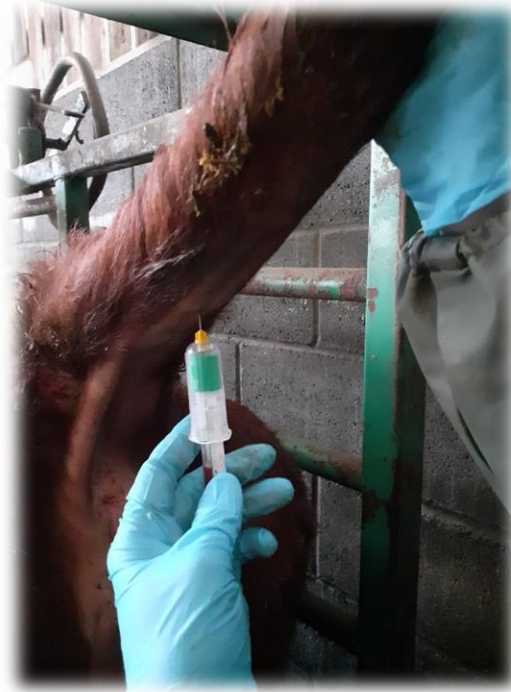


Bovine Blood Sampling Tail Vein



Disclaimer

A series of booklets has been developed by the Clinical Skills Lab team (staff, recent graduates and students) from the School of Veterinary Sciences, University of Bristol, UK.

Please note:

- Each booklet illustrates one way to perform a skill and it is acknowledged that there are often other approaches. Before using the booklets students should check with their university or college whether the approach illustrated is acceptable in their context or whether an alternative method should be used.
- The booklets are made available in good faith and may be subject to changes.
- In using these booklets you must adopt safe working procedures and take your own risk assessments, checked by your university, college etc. The University of Bristol will not be liable for any loss or damage resulting from failure to adhere to such practices.

This work is under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.



© The University of Bristol, 2020



University of
BRISTOL

Year Group: BVSc & AGEP



Equipment for this station:

- Gloves
- Vacutainer holder
- Vacutainer needle
- Vacutainer blood collection tube
- Bovine tail model

Considerations for this station:

- The needles are sharp and therefore present a risk of a needle stick injury. Handle with care.
- Refer to and follow the instruction booklet 'CSL_U02 Safe Use of Needles'.
- For more information please refer to 'General Risk Assessment Form: Needles CSL_R03' (in the CSL) .
- Dispose of used needles in a sharps container.
- N.B. The bovine tail model in the CSL does not have blood. However, the model is useful for practising handling the vacutainer holder, needle & blood tube and holding the tail.

Anyone working in the Clinical Skills Lab must read the 'CSL_I01 Induction' and agree to abide by the 'CSL_I00 House Rules' & 'CSL_I02 Lab Area Rules'

Please inform a member of staff if equipment is damaged or about to run out.



Clinical Skills: Tail Vein Blood Sampling



1
Wearing gloves, select a vacutainer needle, plastic vacutainer holder and a blood collection tube (which may have a red, green or purple top depending on the reason for the sample collection – see further information later in the booklet).



2
Hold the vacutainer needle in your dominant hand. With your non-dominant hand, hold the blood tube in your palm and the vacutainer holder between your thumb and index finger.



3
Remove the cap from the shorter part of the needle using a twisting and pulling motion. This will reveal a needle, that may be covered with a rubber sheath (below) depending on the brand.



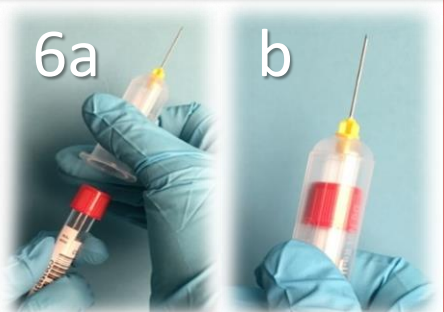
The needle must be handled with care - as for any sharp!



4
Insert the needle into the small opening at the top of the vacutainer holder. Screw the needle into the holder until it is firmly secured in place.



5
Remove the other needle cap to reveal the sampling end of the needle. Hold the needle cap in the palm of your non-dominant hand or put it in a safe place e.g. in your veterinary equipment box.



6a
Transfer the vacutainer holder into your dominant hand and prepare to insert the blood tube.
6b
Slide the blood tube up inside the holder until it just touches the needle tip. **Do not** push the blood tube onto the needle as this will pierce the bung, releasing ('blowing') the vacuum and rendering the tube useless.



Clinical Skills: Tail Vein Blood Sampling

7



Stand behind the cow and slightly to one side of the tail. Hold the tail approximately a third of the way from the base with your non-dominant hand and lift it until the ventral aspect (underside) is clearly visible and accessible.

8



Locate and palpate the groove which is situated in the midline on the ventral aspect of the tail. The coccygeal vein and artery run in this groove.

9



With the vacutainer holder in your dominant hand, rest the back of your fingers against the base of the tail (to steady your hand in case the animal moves).

10



Insert the needle into the midline groove at 90 degrees to the tail surface. Continue to advance the needle to approximately halfway along its length.

11



Stabilise the vacutainer holder with your thumb, index and middle fingers. Hold the blood tube with your 4th and 5th fingers and against your palm. Push the blood tube onto the needle i.e. so that the needle pierces the bung.

12



In a live animal the tube should now fill with blood. *N.B. This will not happen with the tail model in the CSL.* Remove the tube when it is about two thirds full. If collecting more than one sample (e.g. different tube types), leave the needle and vacutainer holder in situ and insert the next blood tube.



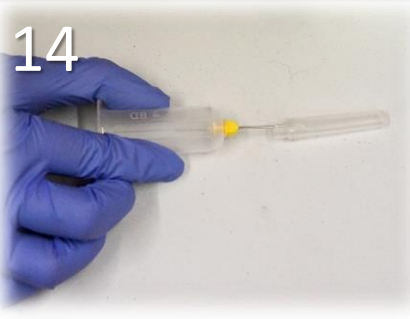
Clinical Skills: Tail Vein Blood Sampling

13



When all samples have been collected, remove the vacutainer holder and needle from the tail.

14



Safely recap the needle using the one-handed needle re-capping technique (see 'CSL_U02 Safe Use of Needles'). This should be done on a flat surface e.g. in your veterinary equipment box.

N.B. In a real animal, if blood does not flow and there is a need to reposition the needle it is important to preserve the vacuum in the blood tube. Therefore:

- **Always remove the blood tube from the needle before removing the needle from the vein.**

Otherwise the vacuum is lost ('blown') and a quiet hissing noise may be heard!

Types of blood tube and their uses



Red top

Plain (clotted)

Serum

Uses e.g.

- Serology
- Biochemistry
- Down cow



Green top

Lithium heparin

Plasma

Uses e.g.

- Biochemistry including non esterified fatty acids (NEFAs)
- Trace elements (Se, Co, Cu, Zn)



Purple top

EDTA

Uses e.g.

- Complete blood count (CBC)

N.B. It is always advisable to check with the laboratory doing the tests for their preferred sample type (as it can vary).



University of
BRISTOL

Resetting the station: Tail Vein Blood Sampling

Having replaced the cap onto the exposed needle (Step 14):

1. Unscrew the needle from the vacutainer case.
2. Dispose of the needle in a sharps container.
3. Replace the vacutainer holder in the container provided.
4. Replace the blood tube/s in the container provided.
N.B. The tubes can be re-used even if the vacuum has been 'blown' as the model does not contain blood.

Station ready for the next person:



Please inform a member of staff if equipment is damaged or about to run out.



When working on farm with a live animal:

- The animal may move as you insert the needle. You can temporarily let go of the vacutainer holder and it will remain in place in the cow.
- If blood doesn't appear or it stops coming into the blood tube, try twisting the needle slightly, being careful not to remove the needle from the tail (as this will 'blow' the vacuum). Consider the following and re-direct if necessary:
 - Has the needle been inserted exactly in the midline?
 - Is the tail straight?
- N.B. If needing to reposition the needle, it is important to preserve the vacuum in the blood tube. Therefore:
Always remove the blood tube from the needle before removing the needle from the vein.
Otherwise the vacuum is lost ('blown') and a quiet hissing noise may be heard!
- If the vacuum in a blood tube is lost ('blown'), it is possible to replace it. Insert a clean needle with a syringe attached into the blood tube and draw back on the syringe, as though filling a syringe with a drug. This will remove the air and replace the vacuum!
- Dispose of the vacutainer needles appropriately in a sharps container; remember the vacutainer holder can be re-used.
- Most blood samples from adult cattle are collected from the tail. It is often easier and safe than from the jugular (see booklet 'CSL_F07 Jugular Blood Sampling'). Use of the jugular vein is usually reserved for calves (when the tail vein can be difficult to find) or down cows when the neck is easier to access, and the head is easier to restrain.