Hirudin, a thrombin inhibitor allows anticoagulation of blood without interference with physiological calcium levels. The specified concentration of hirudin in the blood collection tubes is > 15 µg/ml.

Packages

REF 08128812 001: 50 x 3.0 mL tubes with dried sprayed hirudin; anticoagulant: recombinant hirudin: >15 µg/mL

Storage and stability
Store tubes at 4-25°C. Avoid exposure to direct sunlight.

Note: Deviation from recommended storage conditions may lead to impairment of the tube quality.

Warnings and precautions
Do not use tubes if foreign matter is present!

1. Handle all biological samples and blood collection "sharps" (lancets, needles, luer adapters, and blood collection sets) according to the policies and procedures of your facility.
2. Obtain appropriate medical attention in the case of any exposure to biological samples (for example through a puncture injury), since they may transmit HIV, viral hepatitis, or other blood-borne pathogens.
3. Discard all blood collection "sharps" in biohazard containers approved for their disposal.
4. Transferring a sample from a syringe to a tube is not recommended.
5. If blood is collected through an intravenous (IV) line, ensure that the line has been cleared of IV solution before beginning to fill blood collection tubes. This is critical to avoid erroneous laboratory data from IV fluid contamination.
6. Do not use tubes after their expiration date.

Venipuncture technique and specimen collection

Equipment required for specimen collection

1. The appropriate amount of hirudin tubes.
2. Butterfly blood collection system, needle and tube holder.
3. Practice general safety precautions, using gloves and appropriate apparel for protection from exposure to blood-borne pathogens.
4. Alcohol swab for cleansing site.
5. Tourniquet.
6. Adhesive plaster or bandage.
7. Sharps disposal container for safe disposal of used needle.

Prevention of backflow
To prevent backflow from the tube into the research subject’s arm, observe the following precautions:

1. Place research subject’s arm in a downward position.
2. Hold tube with the cap uppermost.
3. Release tourniquet as soon as blood starts to flow into tube.
4. Make sure tube contents do not touch cap or end of the needle during venipuncture.
5. Use of a butterfly system or similar catheter between the research subject and the blood collection tube.

Specimen collection procedure

1. Remove the cover over the valve section of the needle.
2. Thread the needle firmly into the tube holder. Attach the butterfly blood collection system with its luer adapter part.
3. Apply tourniquet.
4. Prepare venipuncture site with an appropriate antiseptic.
5. Place research subject’s arm in a downward position.
6. Remove needle shield of the butterfly system.
7. Perform venipuncture.

Note: It is recommended to use a no-additive discard tube as first tube.
8. Push tube into the holder and onto the needle valve puncturing the rubber diaphragm. Centre tubes in holder when penetrating the cap to prevent sidewall penetration and subsequent premature vacuum loss.
9. When the tube is full and blood flow ceases, remove it from holder and gently invert the tubes at least 5 times to reach a proper mix of anticoagulant and blood.

Note: Inadequate mixing of tubes may result in platelet clumping, clotting and/or incorrect test results.

10. Optionally, fill further tubes by repeating steps 8 and 9. Follow your facility’s protocol and the above named warnings and precautions in order to terminate specimen collection procedure accordingly.

The tube cap can be removed by a simple and cautious pull action.

Literature
In literature the use of citrate as anticoagulant for platelet function analysis is discussed controversially. Concerns are, that citrate depletes calcium and by reducing free calcium levels inhibits platelet function.

In several publications hirudin was used as anticoagulant in concentration ranges of 5-75 µg/ml.

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