SOP 2.5.4 Blood Collection for RNA isolation

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Version Number 1.0

	Name	Title	Date
Author			
Authoriser			

Effective Date	
Version Number	

Purpose

This SOP describes the procedure for blood collection for extraction of RNA.

Responsibility

It is the responsibility of the research personnel carrying out this procedure to ensure that all steps are completed both competently and safely.

Equipment/reagent requirements

- Blood collection system
- Personal protective equipment; gloves, laboratory coat, protective glasses
- Blood collection tube: ACD tube, Tempus™ Blood RNA Tubes (Applied Biosystems) or PaxGene (Qiagen)
- A polystyrene container with ice to maintain temperature at 4°C for processing and /or transport to processing laboratory, or alternatively use a water-bath (plus a thermometer) with iced water to maintain the temperature at 4°C or a pre-conditioned gel pack at 4°C
- Refrigerator (2-4°C) if overnight sample storage is required
- Freezer -20°C/-80°C if short-term storage is required
- Vortex for sample mixing

Procedure

Using ACD tubes

1. Draw blood directly into the evacuated tube. Filling the tube to the black mark on the tube label indicates that the correct amount of blood has been drawn. Under-filling or

overfilling of the tube can affect laboratory results.

2. The blood collection tube is labeled appropriately either with a unique identification study number and/or a bar code label generated electronically.

3. Record the time that the sample was taken in the study specific documentation or data management system as available.

4. Maintain tubes at RT (18-22°C) and transport to the processing laboratory within 24 hours at RT (18-22°C) for processing.

5. If immediate transfer is not possible, samples can be maintained at RT (18-22°C) and transferred to the processing laboratory for RNA isolation as soon as is practicable or within a maximum of 24 hours. Record the time of processing in the study specific documentation or data management system.
   Note: As a general rule samples should be processed and reach the appropriate storage conditions as soon as is practicable. The maximum time limits proposed are guidelines and should be read in association with a study specific protocol.

Using Tempus Blood RNA Tubes

1. Draw blood directly into the evacuated Tempus Blood RNA Tube. Filling the blood collection tube to the black mark on the tube label indicates that the correct amount of blood has been drawn. Under-filling or overfilling of the tube can affect laboratory results due to the incorrect blood/additive ratio.

2. Immediately after the Tempus tube is filled, stabilise the blood by shaking the tube vigorously or vortexing the contents for 10 seconds to ensure that the stabilising reagent makes uniform contact with the sample.
   IMPORTANT: Failure to mix the stabilising reagent with the blood leads to inadequate stabilisation of the gene expression profile and the formation of microclots that can potentially clog the purification filter.

3. The Tempus Blood RNA tube is appropriately labeled either with a unique study identification number and/or a bar code label generated electronically.

4. Record the time that the sample was taken in the study specific documentation or data management system.

5. Maintain the tubes at 4°C using a refrigerator / polystyrene container with ice. Transport tubes to the processing laboratory as soon as is practicable or within a maximum of 24 hours for immediate processing of RNA or for direct storage at -80°C. Tubes should be transported at 4°C in a polystyrene container on ice. Record the time of processing in the study specific documentation or data management system.

Note: As a general rule samples should be processed and reach the appropriate storage conditions as soon as is practicable. The maximum time limits proposed are guidelines and should be read in association with a study specific protocol.

Using Paxgene tubes

1. Draw blood directly into the evacuated Paxgene tube. Filling the blood collection tube to the black mark on the tube label indicates that the correct amount of blood has been drawn. Under-filling or overfilling of the tube can affect laboratory results due to the incorrect blood/additive ratio.

2. The tube is gently inverted 8-10 times.
   IMPORTANT: It is critical to RNA quality and yield that tubes are thoroughly mixed by inversion at the time of collection, that a full tube of blood be taken and that nothing is placed over the black fill mark on the manufacturer's label of the tube.

3. The Paxgene tube is appropriately labeled either with a unique study identification number and/or a bar code label generated electronically.

4. Record the time that the sample was taken in the study specific documentation or data management system.

5. Maintain the tubes at 4°C in a refrigerator / polystyrene container with ice. Transport tubes to the processing laboratory as soon as is practicable or within a maximum of 24 hours for immediate processing of RNA or for direct storage at -80°C. Tubes should

be transported at 4°C in a polystyrene container on ice. Record the time of processing in the study specific documentation or data management system.

Note: As a general rule samples should be processed and reach the appropriate storage conditions as soon as is practicable. The maximum time limits proposed are guidelines and should be read in association with a study specific protocol.

Change History

SOP Number	Effective Date	Significant Change	Previous SOP No.