

# CRYO- SUPERNATANT

## (CRYO-S)



### Definition

CryoS is the supernatant removed in the process of making cryoprecipitate.

### Content

Contains plasma proteins including albumin and Vitamin K dependant clotting factors II, VII, IX and X (very similar to Frozen Plasma)

### Indications

- Canine Cryo-Supernatant Plasma is indicated for treatment or pre-surgical prophylaxis of bleeding caused by deficiencies of all coagulation factors except for factor VIII and von Willebrand factor.
- Vitamin K dependent coagulopathy
- Able to ameliorate COP
- Hypoalbuminemia
  - o Suggested as the equivalent of commercial 4% albumin solutions
- Ig transfer
- Can be considered for volume resuscitation in acute trauma
- It also contains nearly the full complement of canine albumin and globulins present in whole plasma which makes it useful for physiological conditions that benefit from plasma protein replacement.

### Contraindications

As for Frozen Plasma

### Side Effects and Hazards

As Fresh Frozen Plasma

- Transfusion reactions can still arise despite donor blood typing and crossmatching
- Blood-transmissible diseases may also still occur
- Monitor closely for signs of adverse reactions including circulatory overload
  - o If a reaction occurs, STOP the transfusion immediately, and initiate treatment

## Precautions

Canine Cryo-Supernatant Plasma should be stored frozen at normal freezer temperature (-15°C to -20°C).

- Canine Cryo-Supernatant Plasma has a shelf-life of up to one year in the frozen state (certain coagulation factors)
- It can then be stored frozen for up to another 4 years for use as a source of canine albumin and globulins.
- Must not be mixed with or administered in the same intravenous or other parenteral line with Lactated Ringer's solution or any other solution containing divalent cations.
- The safest fluid to mix with or administer via the same infusion apparatus is 0.9% sodium chloride (NaCl).
- Filters should always be used when administering blood components.
- Canine Cryo-Supernatant Plasma bags should be carefully removed from the freezer to prevent cracking of the bag as the plastic becomes brittle upon freezing.
- Thawing should be conducted in a container or ziplock bag in a water bath with gentle agitation. Do not exceed 37°C

## Administration

- Preferred site for transfusion is intravenous
  - o In very young or compromised animals, intraperitoneal route may be used
- Gently mix the contents of the plasma bag before administering. Do not use any blood product if the bag has been damaged and is leaking contents or if the contents are clotted, excessively hemolyzed or discolored.

## Dosage

The volume transfused will depend upon the individual patient's needs which generally should not exceed 6-10 ml/kg given once or twice daily and not more than 20 ml/kg bodyweight over a 24 hour period for normovolemic animals.

- Slow for the first 10-30 minutes to monitor for signs of adverse reaction.
- Normovolemic patients: 20 ml/kg over 4 hours.
- Hypovolemic patients: Max. 20ml/kg/h
- For acute needs, patients can usually tolerate transfusion given at 4-6 ml/minute.
- For cardiac or other compromised patients at risk: up to 4ml/kg/h

## Infusion Rate

As Fresh or Frozen Plasma

- The volume of Canine Cryo-Supernatant Plasma needed is usually 10 mL/Kg given at a rate not to exceed 4-6 mL/minute twice daily.
- To control certain bleeding disorders dosage is given for 3-5 days or until bleeding stops.
- To provide a source of plasma proteins for debilitated animals with systemic illnesses and for orphan puppies, plasma is given at 1 ml/30g of neonatal puppy weight up to a maximum of 10 ml, and at 6-10 ml/kg thereafter
- Plasma treatment should be repeated daily or, at once or twice weekly intervals as needed