Hemotherapy practice guide

DOGS · CATS · HORSES

HemoLife
BLOOD BANK

Our blood bank wants to be part of an optimistic view of the future of veterinary medicine, highlighting the potential for new technologies, global collaboration, integrated logistic platforms and the continued growth and improvement of this activity. We should always emphasize and believe the true power and the collective impact of working together on a global and universal blood bank platform, to ensure that animals everywhere have access to lifesaving products.

Love for Life

Safety

All units are tested for infectious agents by PCR and/or serology. In addition to a rigorous selection of blood donors and a comprehensive quality control of blood components, these measures ensure the safety and efficacy of the product.

Animal Welfare

We love our blood donors! Their wellbeing is our top priority, and our donation teams are specially trained to make sure they feel at ease, enjoy a friendly atmosphere, and have a smooth, safe, and quick donation process.
We will always be grateful!

Friendly Support

Our support team is available to ensure that every processes run smoothly. You can rely on us for assistance, whether it's scientific guidance or monitoring the shipment of the blood unit.

Traceability

All information is recorded from the point of donation through to shipment, thereby ensuring complete traceability of the blood bank activity. This is of crucial importance to the safety of donors and patients.

Cold Chain

It is of the utmost importance to maintain the cold chain in order to prevent hemolysis and guarantee product quality. To this end, we use temperature control devices, dedicated fridges/freezers and validated shipment boxes.

Good Manufacturing Practices

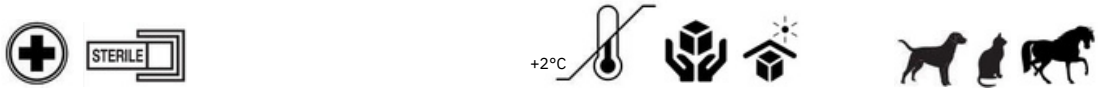
Our processes are in accordance with GMP guidelines to guarantee risk mitigation to safeguard product quality, to ensure optimal workflow, clear task delineation, accurate record-keeping, and overall monitoring of manufacturing facilities.

Our blood bank is totally committed to providing the highest quality of this lifesaving service. We are dedicated to delivering safe and effective blood products as quickly as possible, while also ensuring the welfare and best practices of our blood donor programe. We care about our donors and patients!

Our commitment

PACKED RED BLOOD CELLS

PRBC *Life*



Name, form & presentation

Dog
PRBC DogLife, 55-70%, intravenous solution for perfusion
220 ml and 100 ml (volumes can vary by 10%)
Cat
PRBC CatLife, 40-55%, intravenous solution for perfusion
25ml (volumes can vary by 10%)
Horse
PRBC HorseLife, 50-65%, intravenous solution for perfusion
1000 ml (volumes can vary by 10%)

Composition

Dog
Active ingredient: Canine erythrocytes with hematocrit between 55% and 70%
Inactive ingredients: CPD (citrate, phosphate, dextrose), SAG-M (saline solution with mannitol, adenine and glucose), canine plasma
Cat
Active ingredient: Feline erythrocytes with hematocrit between 40% and 55%
Inactive ingredients: CPD (citrate, phosphate, dextrose), SAG-M (saline solution with mannitol, adenine and glucose), feline plasma
Horse
Active ingredient: Equine erythrocytes with hematocrit between 50% and 65%
Inactive ingredients: CPD (citrate, phosphate, dextrose), SAG-M (saline solution with mannitol, adenine and glucose), equine plasma

Target species

Dog, Cat and Horse

Indications

It should be noted that the benefits of packed red blood cells are only transitory. Specific treatment of the primary pathology and supportive treatment is always required.
Red blood cells transfusions are used to: 1) treat symptomatic anemias (regenerative and non-regenerative); 2) to increase red blood cells number prior anesthesia in an anemic patient, or prior an expected bleeding procedure; 3) to increase oxygenation during ressuscitation in hypovolemic shock; 4) to improve platelet function in bleeding patients with thrombocytopenia and anemia.

Dosage

The total volume transfused should be 10 ml/kg/transfusion, which may be higher up to 20-30 ml/kg in cases of hypovolaemic shock. To ensure correct dosage, body weight should be determined as accurately as possible.
After transfusion the patient should be reassessed to evaluate the need for additional transfusions. There is no specific desired post transfusion haematocrit; the goal should be the patient hemodynamic stabilization, which usually is achieved with 5-8% haematocrit increase.

Administration

It is recommended that the rate of administration be slow (0.25 ml/kg/h) for the first 15-30 minutes to allow for the assessment of acute transfusion reactions. Following this period, the rate should be 5-10 ml/kg/h in normovolaemic dogs and horses, or 3-5 ml/kg/h in cats.
In animals at risk of volume overload (heart failure, renal failure or hypertension), the rate of administration should be 1-3 ml/kg/h.
The unit should be left at room temperature for 15 minutes before administration. Quick active heating processes may cause haemolysis and should be avoided.
Prior to commencing the transfusion, it is essential to gently shake the contents of each unit.
In the event that the unit has been stored for a period exceeding 28 days or has been exposed to a breach in the cold chain during storage, it is recommended a quantitative or qualitative assessment of haemolysis. If it exceeds 1% in dogs/horses or 1,5% in cats, the unit should not be used.
It is recommended that an intravenous catheter be placed up to 24 hours before the transfusion.
It is always required to use a dedicated administration system with filter.
The use of an infusion pump approved for hemocomponents administration is recommended only in patients with less than 3 kg, as it may be associated with haemolysis increase.

Contraindications

Do not use if hypersensitive to the active or inactive ingredients

PACKED RED BLOOD CELLS

PRBC *Life*

Warnings

It is recommended that blood compatibility tests be conducted in accordance with the recommendations set forth in specialized literature. Despite the implementation of such tests, the potential for adverse reactions remains.
Do not use if the unit is damaged, perforated, leaking, has visible clots, dark discoloration or other signs of deterioration.

Precautions

Always take the necessary precautions for the safe use of this product exclusively in target species.
If the dosage exceeds 20 ml/kg/day, serum calcium levels should be monitored and supplemented if necessary.
Blood pressure should also be carefully monitored to avoid volume overload reactions.
In the event of self-administration, self-injection, or accidental ingestion, it is imperative to seek immediate medical attention and present the label to the attending physician.
The safety of this product has not been determined during pregnancy and lactation, however no specific reports of incompatibilities or side effects are described in specialized bibliography.
Special precautions for environmental protection: always discharge material in contact with hemocomponents on a dedicated container for biological waste. External paper package or shipping material should be reused or recycled.
This should be done in compliance with national requirements and any applicable national collection systems.

Side effects

Common (frequent), 1/10 to 1⁄100 transfused animals:
Febrile non-haemolytic reactions (FNHTR), transfusion-associated circulatory overload (TACO), transfusion associated dyspnea (TAD), allergic reactions (pruritus, urticaria, vomiting, angioedema, anaphylaxis), acute immunemediated haemolytic reactions.
Uncommon (infrequent), 1/100 to 1⁄1000 transfused animals:
Transfusion-related acute lung injury (TRALI), non-immune-mediated haemolytic reactions, transfusion-transmitted infection (TTI), bacterial contamination, citrate toxicity, delayed immune-mediated haemolytic reactions.
Very rare, < 1⁄10000 transfused animals:
Delayed serologic transfusion reactions (DSTR), hyperammonaemia, hypotensive transfusion reaction (HYTR).

The reporting of adverse events is of significant importance as it permits the continuous monitoring of the safety of a veterinary medicine. Should you observe any effects mentioned in this instructions or other effects, even if not mentioned, or should you believe that this product has not been effective, you are encouraged to inform Hemolife.

Overdose

In the event of an overdose, it is essential to monitor the presence of transfusion-related volume overload by measuring arterial pressures and investigate possible cardiac or pulmonary effects. Furthermore, monitoring serum calcium levels is crucial to identify and address any potential citrate intoxication.
Side effects frequencies may also increase in the event of overdose.
Cats, or young and old patients are specially exposed to overdose complications.

Interactions

It is inadvisable to administer in the same intravenous route Lactated Ringer's solution, non-isotonic fluids or medicines in conjunction with this hemocomponent.

Storage and Shelf life

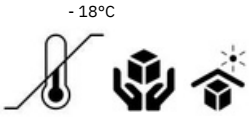
Store between +2°C and +6°C for a maximum of 42 days. During transport, higher temperatures up to +10°C during 24 hours are acceptable. In case of temperature deviation, an hemolysis control should be performed before use.
Do not freeze.
Store in a dedicated fridge to avoid contamination and frequent temperature changes. Storage temperature should be permanently monitored by dataloggers.
Store in the original blood bag and keep the external paper box to protect from damages and from the light.
Protect from direct sunlight.
Keep out of reach and sight of children.
Do not use this veterinary medicinal product after the expiry date indicated in the label (after "EXPIRE").
Depending on the storage conditions and its temperature fluctuations, the hemolysis may be higher than 1% before the expiry date. Thus, it is recommended to evaluate the hemolysis before use any unit stored for more than 28 days, if the cold chain is broken or if there is abnormal discoloration.

Additional information

The product packaging is a sterile PVC-DEHP blood bag protected by a cardboard box.
Canine units are leucodepleted.
After 28 days it is recommended to perform a haemolysis test before transfusion.
Every unit is tested for infectious agents according to official guidelines for veterinary blood banks. However, an informed consent should be signed by the patient owner before transfusion, highlighting the risk of transfusion reactions and the remote chance of infectious agents transmission.
This product should be used after medical prescription. Patients should be kept under veterinary surveillance during and up to 24 hours after transfusion at least.
Donor welfare is ensured during the blood donation process, by a super friendly, dedicated and well-trained team.

PLASMA

Plasma *Life*



Name, form & presentation

Dog
Plasma DogLife, 45-70 mg/ml, intravenous solution for perfusion
220 ml and 100 ml (volumes can vary by 10%)
Cat
Plasma CatLife, 45-70 mg/ml, intravenous solution for perfusion
25ml (volumes can vary by 10%)
Horse
Plasma HorseLife, 45-70 mg/ml, intravenous solution for perfusion
1000 ml (volumes can vary by 10%)

Composition

Dog
Active ingredient: Canine plasma with 45-70 mg/ml of dog plasma proteins
Inactive ingredients: CPD (citrate, phosphate, dextrose)
Cat
Active ingredient: Feline plasma with 45-70 mg/ml of cat plasma proteins
Inactive ingredients: CPD (citrate, phosphate, dextrose)
Horse
Active ingredient: Equine plasma with 45-70 mg/ml of horse plasma proteins
Inactive ingredients: CPD (citrate, phosphate, dextrose)

Target species

Dog, Cat and Horse

Indications

It should be noted that the benefits of plasma are only transitory. Specific treatment of the primary pathology and supportive treatment is always required.
Plasma transfusions are used as an aid in increasing the level of albumin, immunoglobulins, clotting factors, and anti-inflammatory mediators in the following conditions:

1. *Hypoalbuminaemia* (<1.5 g/dl + clinical signs, or <1.5 g/dl + invasive procedure) - Protein-losing enteropathy (IBD, neoplasia, lymphangiectasia, parvovirosis, panleukopenia, hypoadrenocorticism, etc.), protein-losing nephropathy, hepatic disease, systemic inflammation processes (SIRS/Sepsis/DIC), vasculitis, third space fluid losses, or burns;
2. *Coagulopathy* - Hemophilia A, hemofilia B, von Willebrand's disease, hypobrinogenemia, rodenticide/warfarin intoxication, hepatobiliary disease, or systemic inflammation processes (SIRS/Sepsis/DIC associated to severe trauma, gastric dilatation volvulus, heat stroke, systemic infection, generalized hypoxia/hypoperfusion, tissue necrosis, neoplasia or acute hemorrhagic diarrhea syndrome);
3. *Severe bleeding process* by trauma, neoplasia, surgery or spontanious - Hemorrhagic shock (blood loss > 30% of total blood volume) or refractory hypotension
4. *Hypoglobulinaemia* (neonatal).

Dosage

The volume transfused should be 10 ml/kg/transfusion, which may be higher up to 20-30 ml/kg in cases of hypovolaemic shock with refractory hypotension.
To increase albumin in 0.2 g/dl, a plasma transfusion of 10-20 ml/kg is required, meaning large volumes are needed in hypoalbuminemia cases. To ensure correct dosage, body weight should be determined as accurately as possible.
After transfusion the patient should be reassessed to evaluate the need for additional transfusions, which may be repeated every 6 to 24 hours considering the following goals (depending on the pathology): patient stabilization with symptoms improvement, bleeding control, clotting times decrease and/or albumin increase up to 2 g/dl.

Administration

It is recommended that the rate of administration be slow (0.25 ml/kg/h) for the first 15-30 minutes to allow for the assessment of acute transfusion reactions. Following this period, the rate should be 5-10 ml/kg/h in normovolaemic dogs and horses, or 3-5 ml/kg/h in cats.
In animals at risk of volume overload (heart failure, renal failure or hypertension), the rate should be 1-3ml/kg/h.
Constant rate infusion 1,5-3 ml/kg/h can also be used over 24 hours. Before use, the unit should be thawed in a properly controlled environment at 37°C immediately after removal from storage; an water bath within a protective bag is usually used.
It is not recommended to use a microwave.
It is recommended that an intravenous catheter be placed up to 24 hours before the transfusion.
It is always required to use a dedicated administration system with filter.
The use of an infusion pump is always recommended.

Contraindications

Do not use if hypersensitive to the active or inactive ingredients.

PLASMA

Plasma *Life*

Warnings

It is recommended that blood compatibility tests be conducted in accordance with the recommendations set forth in specialized literature. In dogs there is no evidence to suggest that blood group compatibility reduces the risk of plasma transfusion reactions.
Do not use if the unit is damaged, perforated, leaking, has visible clots/cells clusters, dark discoloration or other signs of deterioration. Light red color is acceptable due to erythrocyte contamination during the laboratory processing, because a minimal quantity of free haemoglobin does not pose a risk to the patient.
Fibrin presence is normal and may form flakes or gelatinous clots in suspension, which are retained in the filters.

Precautions

Always take the necessary precautions for the safe use of this product exclusively in target species.
If the dosage exceeds 20 ml/kg/day, serum calcium levels should be monitored and supplemented if necessary.
Blood pressure should also be carefully monitored to avoid volume overload reactions.
In the event of self-administration, self-injection, or accidental ingestion, it is imperative to seek immediate medical attention and present the label to the attending physician.
The safety of this product has not been determined during pregnancy and lactation, however no specific reports of incompatibilities or side effects are described in specialized bibliography.
It is imperative that frozen bags be handled with the utmost care, as they are susceptible to rupture.
Special precautions for environmental protection: always discharge material in contact with hemocomponents on a dedicated container for biological waste. External paper package or shipping material should be reused or recycled.
This should be done in compliance with national requirements and any applicable national collection systems.

Side effects

Common (frequent), 1/10 to 1/100 transfused animals:
Transfusion-associated circulatory overload (TACO), transfusion associated dyspnea (TAD), transfusion-related acute lung injury (TRALI), allergic reactions (pruritus, urticaria, vomiting, angioedema, anaphylaxis).
Uncommon (infrequent), 1/100 to 1/1000 transfused animals:
Febrile non-haemolytic reactions (FNHTR), transfusion-transmitted infection (TTI), bacterial contamination, citrate toxicity.
Very rare, < 1/10000 transfused animals:
Hyperammonaemia.

The reporting of adverse events is of significant importance as it permits the continuous monitoring of the safety of a veterinary medicine. Should you observe any effects mentioned in this instructions or other effects, even if not mentioned, or should you believe that this product has not been effective, you are encouraged to inform Hemolife.

Overdose

In the event of an overdose, it is essential to monitor the presence of transfusion-related volume overload by measuring arterial pressures and investigate possible cardiac or pulmonary effects. Furthermore, monitoring serum calcium levels is crucial to identify and address any potential citrate intoxication.
Side effects frequencies may also increase in the event of overdose.
Cats, or young and old patients are specially exposed to overdose complications.

Interactions

It is inadvisable to administer in the same intravenous route Lactated Ringer's solution or medicines in conjunction with this hemocomponent.

Storage and Shelf life

Store frozen at -18ºC, or lower, for a maximum of 5 years. After the first year of storage, labile clotting factors (V and VIII) may decrease its activity and therapeutic effect. For that reason it is named Fresh Frozen Plasma for some authors in the first year of storage. Once thawed, the component should not be refrozen and should be transfused as soon as possible. If delay is unavoidable, the component should be stored and used within 4 hours if maintained between +20°C and +24°C, or up to 5 days if stored between +2°C and +6°C, but it should be noted that extended post-thaw storage will result in a decline in the content of labile coagulation factors.
Store in a dedicated freezer to avoid contamination and frequent temperature changes. Storage temperature should be permanently monitored by dataloggers.
Store in the original blood bag and keep the external paper box to protect from damages and from the light.
Protect from direct sunlight. Keep out of reach and sight of children.
Do not use this veterinary medicinal product after the expiry date indicated in the label (after "EXPIRE").

Additional information

The product packaging is a sterile PVC-DEHP blood bag protected by a cardboard box.
Canine units are leucodepleted.
Every unit is tested for infectious agents according to official guidelines for veterinary blood banks. However, an informed consent should be signed by the patient owner before transfusion, highlighting the risk of transfusion reactions and the remote chance of infectious agents transmission.
The use of pre-transfusion medicines does not reduce the risk of transfusion reactions. Unless there is a history of previous transfusion reactions, its use is not recommended.
This product should be used after medical prescription. Patients should be kept under veterinary surveillance during and to 24 hours after transfusion at least.
Donor welfare is ensured during the blood donation process, by a super friendly, dedicated and well-trained team.

CRYO PRECIPITATE

CryoP *Life*

Name, form & presentation

Dog
CryoP DogLife, 45-70 mg/ml, intravenous solution for perfusion
45 ml (volume can vary by 10%)

Composition

Dog
Active ingredient: Canine cryoprecipitate with 45-70 mg/ml of dog sedimented cryoglobulin fraction of plasma. It conteins the major portion of the factor VIII, von Willebrand factor, fibrinogen, factor XIII and fibronectin.
Inactive ingredients: CPD (citrate, phosphate, dextrose)

Target species

Dog

Indications

It should be noted that the benefits of cryoprecipitate are only transitory. Specific treatment of the primary pathology and supportive treatment is always required.
Cryoprecipitate transfusions are used as an aid in increasing the level of factor VIII, von Willebrand factor, fibrinogen, factor XIII and fibronectin in the following conditions:

1. Haemophilia A (factor VIII deficiency);
2. Von Willebrand disease;
3. Hyperfibrinolysis and/or hypofibrinogenemia (e.g. trauma, DIC or hepatopathy).

Dosage

The volume transfused should be 4-5 ml/kg/transfusion single dose or every 12-24 hours (depending on the condition severity), which may be higher up to 20-30 ml/kg in cases of hypovolaemic shock with refractory hypotension.
For treatments before surgery, better transfuse in the last 4 hours. For highly invasive procedures, repeat every 30 minutes.

Administration

It is recommended that the rate of administration be slow (0.25 ml/kg/h) for the first 15-30 minutes to allow for the assessment of acute transfusion reactions. Following this period, as cryoprecipitate may be a viscous solution, rates of 2–4 ml/kg/h should be used. If there is higher risk of volume overload, infusion rate should be 1 ml/kg/h and gradually increased if there are no transfusion reactions signs.
Before use, the unit should be thawed in a properly controlled environment at 37°C immediately after removal from storage; an water bath within a protective bag is usually used. It is not recommended to use a microwave.
Dissolution of the precipitate should be encouraged by careful manipulation during the thawing procedure.
It is recommended that an intravenous catheter be placed up to 24 hours before the transfusion.
It is always required to use a dedicated administration system with filter.
The use of an infusion pump is always recommended.

Contraindications

Do not use if hypersensitive to the active or inactive ingredients.

Warnings

It is recommended that blood compatibility tests be conducted in accordance with the recommendations set forth in specialized literature. There is no evidence to suggest that blood group compatibility reduces the risk of cryoprecipitate transfusion reactions.
Do not use if the unit is damaged, perforated, leaking, has visible clots/cells clusters, dark discoloration or other signs of deterioration. Light red color is acceptable due to erythrocyte contamination during the laboratory processing, because a minimal quantity of free haemoglobin does not pose a risk to the patient.

Precautions

Always take the necessary precautions for the safe use of this product exclusively in dogs.
In the event of self-administration, self-injection, or accidental ingestion, it is imperative to seek immediate medical attention and present the label to the attending physician.
The safety of this product has not been determined during pregnancy and lactation, however no specific reports of incompatibilities or side effects are described in specialized bibliography.
It is imperative that frozen bags be handled with the utmost care, as they are susceptible to rupture.
Special precautions for environmental protection: always discharge material in contact with hemocomponents on a dedicated container for biological waste. External paper package or shipping material should be reused or recycled.
This should be done in compliance with national requirements and any applicable national collection systems.

CRYO PRECIPITATE

CryoP *Life*

Side effects

Common (frequent), 1/10 to 1/100 transfused animals:
Transfusion-associated circulatory overload (TACO), transfusion associated dyspnea (TAD), transfusion-related acute lung injury (TRALI), allergic reactions (pruritus, urticaria, vomiting, angioedema, anaphylaxis).
Uncommon (infrequent), 1/100 to 1/1000 transfused animals:
Febrile non-haemolytic reactions (FNHTR), transfusion-transmitted infection (TTI), bacterial contamination, citrate toxicity.
Very rare, < 1/10000 transfused animals:
Hyperammonaemia.

The reporting of adverse events is of significant importance as it permits the continuous monitoring of the safety of a veterinary medicine. Should you observe any effects mentioned in this instructions or other effects, even if not mentioned, or should you believe that this product has not been effective, you are encouraged to inform Hemolife.

Overdose

In the event of an overdose, the high safety margin means that intoxication is highly unlikely.
In the event of an overdose, it is essential to monitor the presence of transfusion-related volume overload by measuring arterial pressures and investigate possible cardiac or pulmonary effects. Furthermore, monitoring serum calcium levels is crucial to identify and address any potential citrate intoxication.
Side effects frequencies may also increase in the event of overdose.
Young and old patients are specially exposed to overdose complications.

Interactions

It is inadvisable to administer in the same intravenous route Lactated Ringer's solution or medicines in conjunction with this hemocomponent.

Storage and Shelf life

Store at -18ºC, or lower, for a maximum of 1 year.
In order to preserve labile factors, cryoprecipitate should be used as soon as possible following thawing. It should not be refrozen.
Store in a dedicated freezer to avoid contamination and frequent temperature changes. Storage temperature should be permanently monitored by dataloggers.
Store in the original blood bag and keep the external paper box to protect from damages and from the light. Protect from direct sunlight.
Keep out of reach and sight of children.
Do not use this veterinary medicinal product after the expiry date indicated in the label (after "EXPIRE").

Additional information

The product packaging is a sterile PVC-DEHP blood bag protected by a cardboard box.
Cryoprecipitate units are leucodepleted.
Every unit is tested for infectious agents according to official guidelines for veterinary blood banks. However, an informed consent should be signed by the patient owner before transfusion, highlighting the risk of transfusion reactions and the remote chance of infectious agents transmission.
The use of pre-transfusion medicines does not reduce the risk of transfusion reactions. Unless there is a history of previous transfusion reactions, its use is not recommended.
This product should be used after medical prescription. Patients should be kept under veterinary surveillance during and up to 24 hours after transfusion at least.
Donor welfare is ensured during the blood donation process, by a super friendly, dedicated and well-trained team.

CRYO SUPERNATANT

CryoS *Life*

Name, form & presentation

Dog
CryoS DogLife, 45-70 mg/ml, intravenous solution for perfusion
200 ml (volume can vary by 20%)

Composition

Dog
Active ingredient: Canine cryosupernatant with 45-70 mg/ml of dog supernatant fraction of plasma, prepared from frozen plasma by the removal of the cryoprecipitate. The composition of this product is identical to that of plasma, with the exception of a notable reduction in the levels of fibrinogen, fibronectine, von Willebrand factor and the labile factors V and VIII
Inactive ingredients: CPD (citrate, phosphate, dextrose)

Target species

Dog

Indications

It should be noted that the benefits of cryosupernatant are only transitory. Specific treatment of the primary pathology and supportive treatment is always required. Cryosupernatant transfusions are used as an aid in increasing the level of albumin, immunoglobulins, clotting fac□tors (except factor V and VIII), and anti-inflammatory mediators in the following conditions:

1. *Hypoalbuminaemia* (<1.5 g/dl + clinical signs, or <1.5 g/dl + invasive procedure) - Protein-losing enteropathy (IBD, neoplasia, lymphangiectasia, parvovirosis, panleukopenia, hypoadrenocorticism, etc.), protein-losing nephropathy, hepatic disease, systemic inflammation processes (SIRS/Sepsis), vasculitis, third space fluid losses, or burns;
2. *Coagulopathy* - Hemofilia B, rodenticide/warfarin intoxication, hepatobiliary disease, or systemic inflammation processes (SIRS/Sepsis associated to severe trauma, gastric dilatation volvulus, systemic infection, generalized hypoxia/hypoperfusion, tissue necrosis, neoplasia or acute hemorrhagic diarrhea syndrome);
3. *Severe bleeding process* by trauma, neoplasia, surgery or spontanious - Hemorrhagic shock (blood loss >30% of total blood volume) or refractory hypotension;
4. *Hypoglobulinaemia* (neonatal).

Dosage

The volume transfused should be 10 ml/kg/transfusion, which may be higher up to 20-30 ml/kg in cases of hypovolaemic shock with refractory hypotension.
To increase albumin in 0,2 g/dl, a cryosupernatant transfusion of 10-20 ml/kg is required, meaning large volumes are needed in hypoalbuminemia cases. To ensure correct dosage, body weight should be determined as accurately as possible.
After transfusion the patient should be reassessed to evaluate the need for additional transfusions, which may be repeated every 6 to 24 hours considering the following goals (depending on the pathology): patient stabilization with symptoms improvement, bleeding control, clotting times decrease and/or albumin increase up to 2 g/dl.

Administration

It is recommended that the rate of administration be slow (0.25 ml/kg/h) for the first 15-30 minutes to allow for the assessment of acute transfusion reactions. Following this period, the rate should be 5-10 ml/kg/h in normovolaemic dogs.
In animals at risk of volume overload (heart failure, renal failure or hypertension), the rate should be 1-3ml/kg/h. Constant rate infusion 1.5-3 ml/kg/h can also be used over 24 hours.
Before use, the unit should be thawed in a properly controlled environment at 37°C immediately after removal from storage; an water bath within a protective bag is usually used. It is not recommended to use a microwave.
It is recommended that an intravenous catheter be placed up to 24 hours before the transfusion.
It is always required to use a dedicated administration system with filter.
The use of an infusion pump is always recommended.

Contraindications

Do not use if hypersensitive to the active or inactive ingredients.

Warnings

It is recommended that blood compatibility tests be conducted in accordance with the recommendations set forth in specialized literature. There is no evidence to suggest that blood group compatibility reduces the risk of cryosupernatant transfusion reactions.
Do not use if the unit is damaged, perforated, leaking, has visible clots/cells clusters, dark discoloration or other signs of deterioration. Light red color is acceptable due to erythrocyte contamination during the laboratory processing, because a minimal quantity of free haemoglobin does not pose a risk to the patient.
Fibrin content may form flakes or gelatinous clots in suspension, which are retained in the filters.

CRYO SUPERNATANT

CryoS *Life*

Precautions

Always take the necessary precautions forthe safe use of this product exclusively in dogs.
If the dosage exceeds 20 ml/kg/day, serum calcium levels should be monitored and supplemented if necessary. Blood pressure should also be carefully monitored to avoid volume overload reactions.
In the event of self-administration, self-injection, or accidental ingestion, it is imperative to seek immediate medical attention and present the label to the attending physician.
The safety of this product has not been determined during pregnancy and lactation, however no specific reports of incompatibilities or side effects are described in specialized bibliography.
It is imperative that frozen bags be handled with the utmost care, as they are susceptible to rupture.
Special precautions for environmental protection: always discharge material in contact with hemocomponents on a dedicated container for biological waste. External paper package or shipping material should be reused or recycled.
This should be done in compliance with national requirements and any applicable national collection systems.

Side effects

Common (frequent), 1/10 to 1⁄100 transfused animals:
Transfusion-associated circulatory overload (TACO), transfusion associated dyspnea (TAD), transfusion-related acute lung injury (TRALI), allergic reactions (pruritus, urticaria, vomiting, angioedema, anaphylaxis).
Uncommon (infrequent), 1/100 to 1⁄1000 transfused animals:
Febrile non-haemolytic reactions (FNHTR), transfusion-transmitted infection (TTI), bacterial contamination, citrate toxicity.
Very rare, < 1⁄10000 transfused animals:
Hyperammonaemia.

The reporting of adverse events is of significant importance as it permits the continuous monitoring of the safety of a veterinary medicine. Should you observe any effects mentioned in this instructions or other effects, even if not mentioned, or should you believe that this product has not been effective, you are encouraged to inform Hemolife.

Overdose

In the event of an overdose, it is essential to monitor the presence of transfusion-related volume overload by measuring arterial pressures and investigate possible cardiac or pulmonary effects. Furthermore, monitoring serum calcium levels is crucial to identify and address any potential citrate intoxication.
Side effects frequencies may also increase in the event of overdose.
Young and old patients are specially exposed to overdose complications.

Interactions

It is inadvisable to administer in the same intravenous route Lactated Ringer's solution or medicines in conjunction with this hemocomponent.

Storage and Shelf life

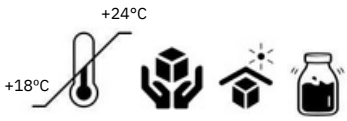
Store at -18°C, or lower, for a maximum of 5 years.
Once thawed, the component should not be refrozen and should be transfused as soon as possible. If delay is unavoidable, the component should be stored and used within 4 hours if maintained between +20°C and +24°C, or up to 5 days if stored between +2°C and +6°C, but it should be noted that extended post-thaw storage will result in a decline in the content of labile coagulation factors.
Store in a dedicated freezer to avoid contamination and frequent temperature changes. Storage temperature should be permanently monitored by dataloggers.
Store in the original blood bag and keep the external paper box to protect from damages and from the light. Protect from direct sunlight.
Keep out of reach and sight of children.
Do not use this veterinary medicinal product after the expiry date indicated in the label (after "EXPIRE").

Additional information

The product packaging is a sterile PVC-DEHP blood bag protected by a cardboard box.
Cryosupernatant units are leucodepleted.
Every unit is tested for infectious agents according to official guidelines for veterinary blood banks. However, an informed consent should be signed by the patient owner before transfusion, highlighting the risk of transfusion reactions and the remote chance of infectious agents transmission.
The use of pre-transfusion medicines does not reduce the risk of transfusion reactions. Unless there is a history of previous transfusion reactions, its use is not recommended.
This product should be used after medical prescription. Patients should be kept under veterinary surveillance during and up to 24 hours after transfusion at least.
Donor welfare is ensured during the blood donation process, by a super friendly, dedicated and well-trained team.

PLATELET CONCENTRATE

Plat *Life*



Name, form & presentation

Dog
Plat DogLife, 0.3x10^{11} platelets/unit, intravenous solution for perfusion
50 ml (volume can vary by 20%)

Composition

Dog
Active ingredient: Canine platelets, with minimum of 0.3x10^{11} platelets per unit, prepared by the buffy coat method from one or more whole blood units.
Inactive ingredients: CPD (citrate, phosphate, dextrose)

Target species

Dog

Indications

It should be noted that the benefits of platelets transfusions are only transitory. Specific treatment of the primary pathology and supportive treatment is always required.
Platelet concentrate transfusions are used as an aid in increasing the level of platelets in the following conditions:

1. *Thrombocytopenias* - caused by a number of factors, including immune-mediated processes, infectious agents (e.g. Ehrlichia and Anaplasma), DIC, neoplasia or bone marrow pathologies.
2. *Thrombocytopathies* - acquired processes (induced by AINEs, clopidogrel, uremia or hepatopathy) or congenital diseases.

In cases of immune-mediated thrombocytopenia, platelets transfusion is only recommended in instances of non controlled bleeding, as it is anticipated that transfused platelets will be rapidly destroyed.
It is recommended that patients with some of the previous conditions who are to undergo surgery, endoscopy, biopsy or any other invasive procedures, be given a prophylactic platelet transfusion if the platelet count is below 80x10^3 platelets/µL. With the exception of these previous patients, the administration of platelet concentrate is recommended only in patients with active bleeding.

Dosage

The volume transfused should be 1 unit/10kg.
To ensure correct dosage, body weight should be determined as accurately as possible.
After transfusion the patient should be reassessed to evaluate the need for additional transfusions, which may be repeated every 8 to 24 hours until the bleeding process is controlled. Platelet count is not an accurate predictor of the transfusion efficacy.

Administration

It is recommended that the rate of administration be slow (0.25 ml/kg/h) for the first 15-30 minutes to evaluate possible acute transfusion reactions. Following this period, the rate should be 5 ml/kg/h in normovolaemic dogs. In animals at risk of volume overload (heart failure, renal failure or hypertension), the rate should be 1-3 ml/kg/h.
It is recommended that an intravenous catheter be placed up to 24 hours before the transfusion.
It is always required to use a dedicated administration system with filter.
The use of an infusion pump approved for hemocomponents administration is recommended only in patients with less than 3 kg, as it may be associated with platelet destruction or pre-activation.

Contraindications

Do not use if hypersensitive to the active or inactive ingredients.

Warnings

It is recommended that blood compatibility tests be conducted in accordance with the recommendations set forth in specialized literature. There is no evidence to suggest that blood group compatibility reduces the risk of platelet transfusion reactions. As it is impossible to type for platelets or plasma protein antigens, one can not predict immune-mediated reactions. Always monitor patients closely during and after transfusions.
Do not use if the unit is damaged, perforated, leaking, has visible clots/cells clusters, dark discoloration or other signs of deterioration. Light red color is acceptable due to erythrocyte contamination during the laboratory processing, because a minimal quantity of erythrocytes or free haemoglobin does not pose a risk to the patient.

PLATELET CONCENTRATE

Plat *Life*

Precautions

Always take the necessary precautions forthe safe use of this product exclusively in dogs.
If the dosage exceeds 20 ml/kg/day, serum calcium levels should be monitored and supplemented if necessary.
Blood pressure should also be carefully monitored to avoid volume overload reactions.
In the event of self-administration, self-injection, or accidental ingestion, it is imperative to seek immediate medical attention and present the label to the attending physician.
The safety of this product has not been determined during pregnancy and lactation, however no specific reports of incompatibilities or side effects are described in specialized bibliography.
Special precautions for environmental protection: always discharge material in contact with hemocomponents on a dedicated container for biological waste. External paper package or shipping material should be reused or recycled.
This should be done in compliance with national requirements and any applicable national collection systems.

Side effects

Common (frequent), 1/10 to 1⁄100 transfused animals:
Febrile non-haemolytic reactions (FNHTR), transfusion-associated circulatory overload (TACO), transfusion associated dyspnea (TAD), allergic reactions (pruritus, urticaria, vomiting, angioedema, anaphylaxis).
Uncommon (infrequent), 1/100 to 1⁄1000 transfused animals:
Transfusion-related acute lung injury (TRALI), transfusion-transmitted infection (TTI), bacterial contamination, citrate toxicity.
Very rare, < 1⁄10000 transfused animals:
Hyperammonemia, post-transfusion purpura (PTP).

The reporting of adverse events is of significant importance as it permits the continuous monitoring of the safety of a veterinary medicine. Should you observe any effects mentioned in this instructions or other effects, even if not mentioned, or should you believe that this product has not been effective, you are encouraged to inform Hemolife.

Overdose

In the event of an overdose, it is essential to monitor the presence of transfusion-related volume overload by measuring arterial pressures and investigate possible cardiac or pulmonary effects. Furthermore, monitoring serum calcium levels is crucial to identify and address any potential citrate intoxication.
Side effects frequencies may also increase in the event of overdose.
Young and old patients are specially exposed to overdose complications.

Interactions

It is inadvisable to administer in the same intravenous route Lactated Ringer's solution or medicines in conjunction with this hemocomponent.

Storage and Shelf life

Store fresh platelet concentrate between +18 and +24ºC, for a maximum of 7 days, at constant light agitation.
Storage temperature should be permanently monitored by dataloggers.
Store in the original blood bag and keep the external paper box to protect from damages and from the light. Protect from direct sunlight.
Keep out of reach and sight of children.
Do not use this veterinary medicinal product after the expiry date indicated in the label (after "EXPIRE").

Additional information

The product packaging is a sterile PVC-DEHP blood bag protected by a cardboard box.
Platelet units are not leucodepleted.
Every unit is tested for infectious agents according to official guidelines for veterinary blood banks. However, an informed consent should be signed by the patient owner before transfusion, highlighting the risk of transfusion reactions and the remote chance of infectious agents transmission.
The use of pre-transfusion medicines does not reduce the risk of transfusion reactions. Unless there is a history of previous transfusion reactions, its use is not recommended.
This product should be used after medical prescription. Patients should be kept under veterinary surveillance during and up to 24 hours after transfusion at least.
Donor welfare is ensured during the blood donation process, by a super friendly, dedicated and well-trained team.

QUALITY CONTROL REQUIREMENTS

	Parameter to be checked		Requirements	Frequency of control
Packed Red Blood Cells PRBC *Life*	**Volume**	Dog	100/220 ml (±10%)	All units
		Cat	25 ml (±10%)	
		Horse	1000 ml (±10%)	
	Haematocrit	Dog	55-70%	One every 5 units
		Cat	40-55%	
		Horse	50-65%	
	Infectious agents	Dog	Negative for *Ehrlichia spp., Anaplasma spp., Babesia spp., Leishmania spp., Brucella spp.* and *Dirofilaria immitis* (PCR/serology)	All units
		Cat	Negative for FIV, FeLV (RNA and Provirus), *Mycoplasma haemofelis, Mycoplasma haemominutum, Mycoplasma turicensis and Bartonella henselae* (PCR/serology)	
		Horse	Negative for *Equine Lentivirus spp., Theileria equii, Babesi caballi and* Equine Hepacivirus (PCR/serology)	
	Haemolysis	Dog	≤ 1%	One every 10 units after production and All units shipped after 28 days of storage
		Cat	≤ 1,5%	
		Horse	≤ 1%	
	Visual changes	Dog, Cat, Horse	No abnormal colour or visible clots	All units
	Bacterial contamination	Dog, Cat, Horse	No bacterial growth	One every 10 units (increased frequency if needed)
	Residual leucocytes per final unit	Dog	< 1,2 $\times 10^{9}$/unit	One every 10 units
Platelet Concentrate *Plat Life*	**Volume**	Dog	50 ml (±20%)	All units
	Platelet content	Dog	> 0,3x10^{11} platelets/unit	All units
	Infectious agents	Dog	Negative for *Ehrlichia spp., Anaplasma spp., Babesia spp., Leishmania spp., Brucella spp.* and *Dirofilaria immitis* (PCR/serology)	All units
	Visual changes	Dog	No abnormal colour or visible clots	All units
	Bacterial contamination	Dog	No bacterial growth	All units

A minimum of 90% of units tested should meet the required value

QUALITY CONTROL REQUIREMENTS

	Parameter to be checked		Requirements	Frequency of control
Plasma **Plasma *Life***	**Volume**	Dog	100/220 ml (±10%)	All units
		Cat	25 ml (±10%)	
		Horse	1000 ml (±10%)	
	Residual cells	Dog, Cat and Horse	RBC < $6x10^9$/L	One every 10 units
			WBC < $0,1x10^9$/L	
			PLT < $50x10^9$/L	
	Infectious agents	Dog	Negative for *Ehrlichia spp., Anaplasma spp., Babesia spp., Leishmania spp., Brucella spp.* and *Dirofilaria immitis* (PCR/serology)	All units
		Cat	Negative for FIV, FeLV (RNA and Provirus), *Mycoplasma haemofelis, Mycoplasma haemominutum, Mycoplasma turicensis and Bartonella henselae* (PCR/serology)	
		Horse	Negative for *Equine Lentivirus spp., Theileria equii, Babesi caballi and* Equine Hepacivirus (PCR/serology)	
	Total protein	Dog, Cat, Horse	45 -70 mg/mL	One every 10 units
	Visual changes	Dog, Cat, Horse	No abnormal colour or visible clots	All units
	Leakage	Dog, Cat, Horse	No leakage in any part of the unit. Requires visual inspection after pressure before freezing	All units
Cryoprecipitate **CryoP *Life***	As indicated for Frozen Plasma except for the following parameter			
	Volume	Dog	45 ml (±10%)	All units
Cryosupernadant **CryoS *Life***	As indicated for Frozen Plasma except for the following parameter			
	Volume	Dog	200 ml (±20%)	All units

A minimum of 90% of units tested should meet the required value

COMPATIBILITY TESTS

	DOGS		CATS	
	First transfusion + Subsequent ones within 4 days	**Subsquent transfusions after 4 days**	**First transfusion + Subsequent ones within 48 hours**	**Subsquent transfusions after 48 hours**
Packed Red Blood Cells PRBC *Life*	**Typing** Strongly Recommended. No Acute Haemolytic Reactions have been reported following a DEA 1 mismatched transfusion. *If blood typed has not been performed, save a sample from the patient prior to transfusion for subsequent blood typing.* *In order to ensure sustainable use of blood resources it is important NOT use DEA 1 negative units in untyped patients.*	**Typing** Every patients should be blood typed to avoid severe Acute Haemolytic Transfusion Reactions. *Samples of patients with previous DEA 1 positive transfusion history, should not be used for blood typing for up 3 months (risk of false DEA 1 pos typing).*	**Typing** Yes, because cats present natural antibodies responsible for severe haemolytic reactions in AB system mismatched transfusions, even in the first transfusion. TypeAB cats can receive type A pRBC if type AB is unavailable.	
	Crossmatching It is not necessary.	**Cossmatching** Yes, it is recommended that major crossmatching be performed alongside type matching.	**Crossmatching** It is suggested major crossmatching be performed alongside typematching, but there is very low risk of haemolytic reaction if only blood type is ensured..	**Crossmatching** Yes, it is strongly recommended that major crossmatching be performed alongside type matching.
Plasma Plasma *Life*	**Typing** It is not necessary. There is insuficient evidence available to make recommendations regarding the use of DEA type specific plasma. **Crossmatching** It is not necessary. Units does not contain antibodies anti-RBC because blood donors previous transfused are not accepted. Also, residual RBC presented in plasma does not seem to have clinical relevance.		**Typing** Yes, AB typing is strongly recomended. . TypeAB plasma is universal (no natural antibodies. **Crossmatching** It is not necessary. If AB typing is not available, minor crossmatching is recommended.	
Platelet Concentrate Plat *Life*	**Typing** It is not necessary. **Crossmatching** It is not necessary.			

Cryoprecipitate *CryoP Life* and Cryosupernatant *CryoS Life*

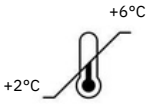
Same recomendations indicated for plasma

SYMBOL MEANINGS

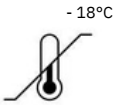
Canine

Feline

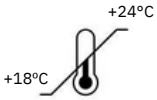
Equine



Storage temperature: +2 to +6 °C



Storage temperature below -18°C



Storage temperature: +18 to +24 °C

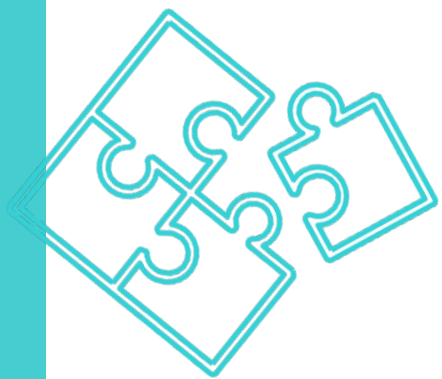
Sterile fluid inside

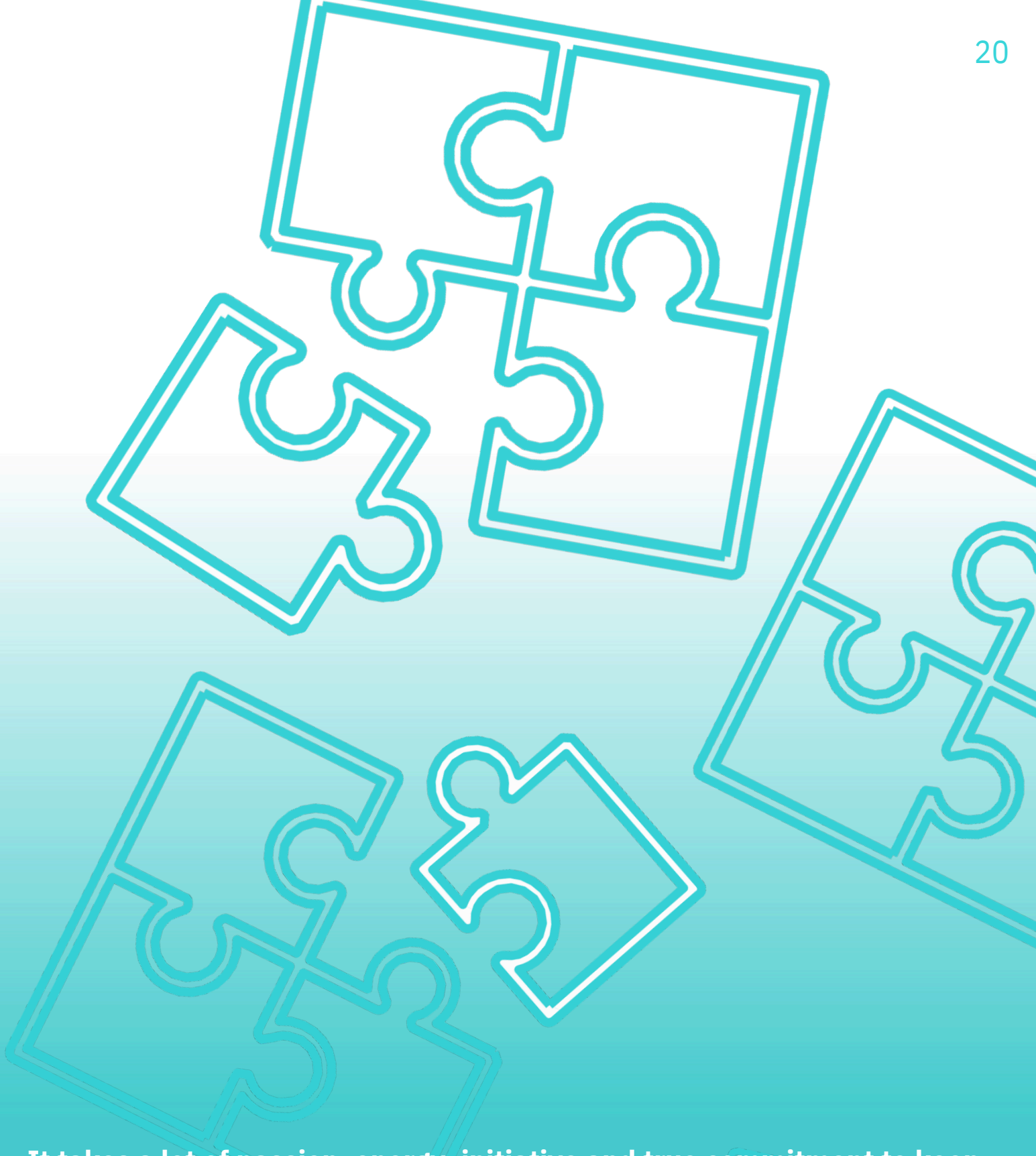
Handle with care

For Veterinary Use Only

Protect from direct sunlight

Gently mix before use





It takes a lot of passion, energy, initiative and true commitment to keep this project going and to build its soul based on trust, technical expertise, welfare and love. We're so lucky to have an amazing team of people who share these values and have come together, joined forces and setup this incredible project!

Founding Partners

Founding Partners

NUNO MARTINS Economist

“With over 20 years of experience as a consultant in business development across various sectors and in real estate appraisal. Working in the veterinary sector for more than 10 years as a tax consultant and as a financial consultant.”

JOSEP CORTINA Commercial Excellence Mngr.

"CSBA, MBA in Business Management, +30y leader in Life Sciences Industry. Advisor speaker in Health Management and Innovation. Love to to develop new Business Models by using new technologies and collaborate with passionate teams."

EVA VIDAL Economist

“I have a background in economics and finance, with experience in risk analysis. 5 years ago, I refocused my career on veterinary medicine and, in particular, veterinary blood banks, motivated by my commitment to improving the lives of animals, who are an indispensable part of our lives.”

INÊS CARDOSO Veterinarian

“With more than 15 years of experience in veterinary medicine, her focus has been veterinary pathology, exotic animals and transfusion medicine. Over than 12 years motivated to improve quality of veterinary blood banking!”

MAFALDA MORAIS Veterinarian

“Working in Small Animal and Emergency Veterinary Medicine since 2008. With a particular passion for Feline “Cat-Friendly” Medicine and Transfusion Medicine. Well-being of the donors and their owners is top priority!”

HELENA FERREIRA Veterinarian

“Veterinarian since 2017, Fear Free certified, passionate about transfusion medicine and animal welfare, all ways prioritizing the highest standards of care. With more than 3 years experience in blood banking and several published research articles!”

BEATRIZ APARICIO Veterinarian

“Veterinarian with 13 years of experience in veterinary clinics, veterinary advice in reference laboratories and, since 2021, learning and contributing to animal transfusion medicine in veterinary blood banks."

INÊS PEREIRA Logistics Manager

“With 6 years of experience in the field, I combine my passion for animals with the mission of advancing veterinary transfusion medicine, ensuring efficiency and care at every step of the process."

LEANDRO COSTA Logistics Manager

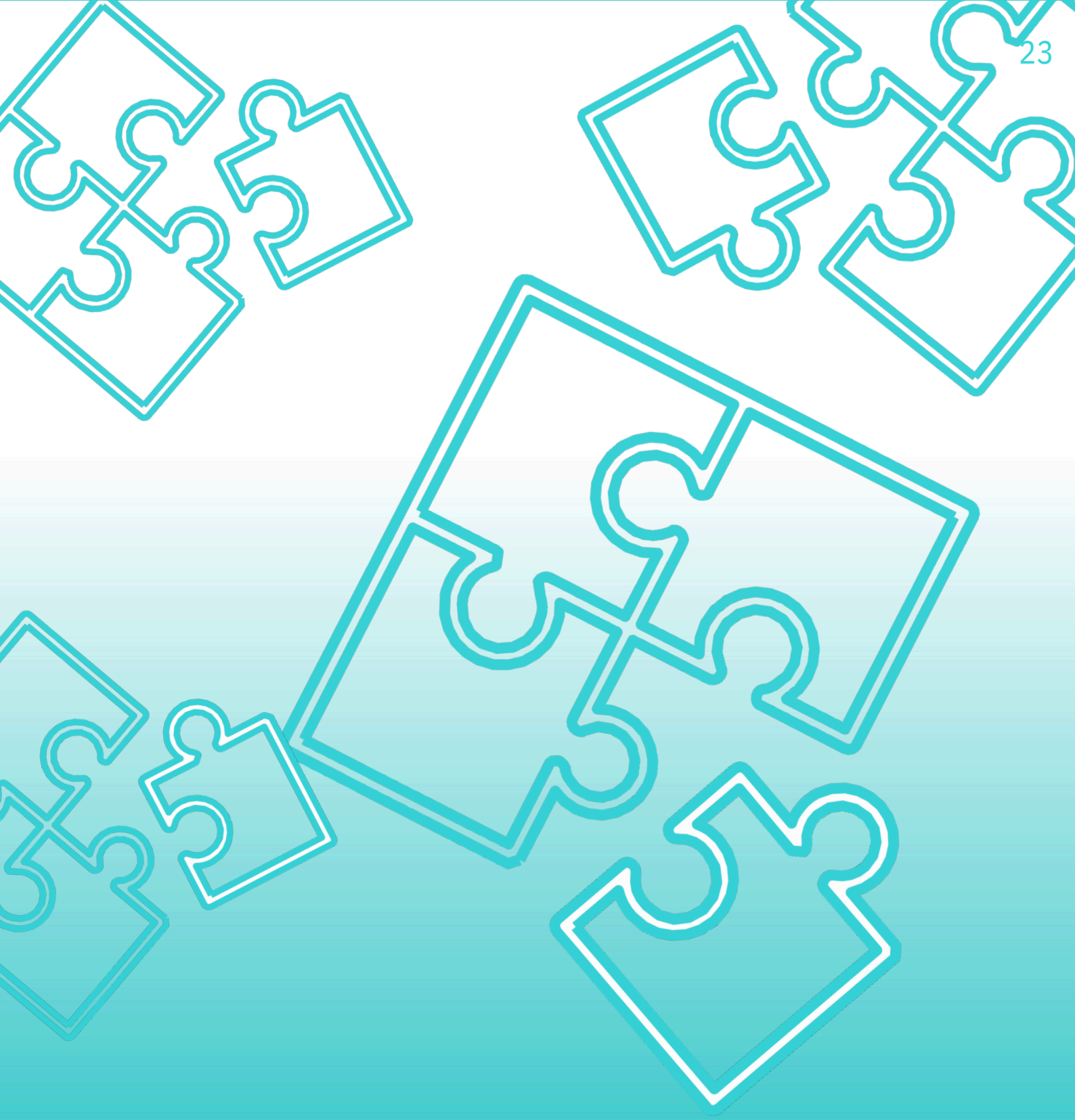
""With a long and varied professional experience in various sectors, it was in the mission of transfusion medicine that I found the motivation and the will to apply all my knowledge and skills."

LUÍSA ROCHA Biomedical Scientist

“Biochemical scientist in veterinary medicine since 2015, with a strong interest in quality management. Since 2020, I have been working at veterinary blood bank, applying my expertise to support critical animal health needs.”

SANDRA ALVES Biomedical Scientist

"My career as a Biomedical Scientist began in 2015, specializing in hematology and transfusion medicine. Since 2021, I have focused on veterinary transfusion medicine, working to improve animal well□being and enhance blood banking practices."



HemoLife Blood Bank encourages everyone to take part in this noble mission of helping save the lives of our animals and ensuring they receive the best possible veterinary care. Join us in supporting our global voluntary blood donor program!

CALL TO ACTION

HemoLife
BLOOD BANK

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