

GLEPTOSIL[®]

HIGH PERFORMANCE IRON

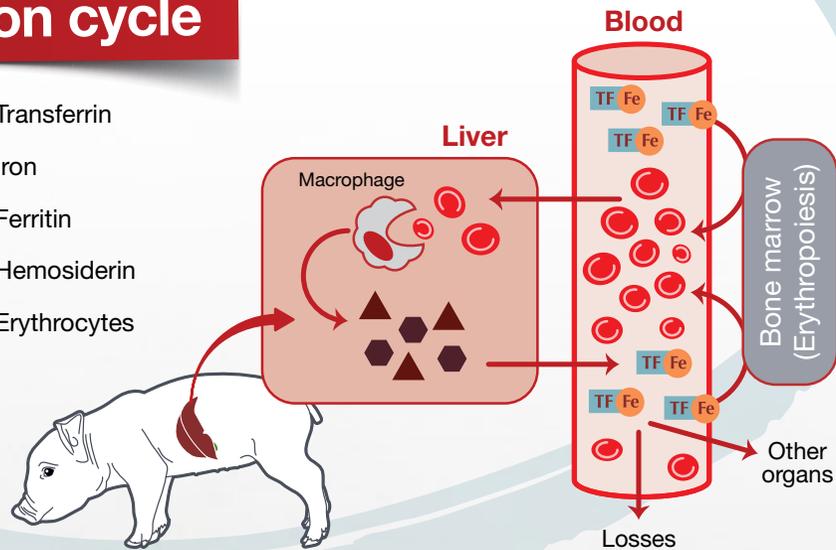
Don't stay halfway

The top
bioavailable
injectable iron
preventing
anaemia



Iron cycle

- TF** Transferrin
- Fe** Iron
- ▲** Ferritin
- ◆** Hemosiderin
- Erythrocytes



This deficiency of iron can cause visible and measurable anaemia.

Salle E., 2006, Comparative study of the efficacy of gleptoferron and iron dextran in anaemia prevention in piglets. Proceedings IPVS, Denmark.

Clinical Anaemia

- Slow growth
- Severe dyspnoea
- Lethargy
- Pallor
- Diarrhoea
- Sudden death

Piglet anaemia: a physiological pathology

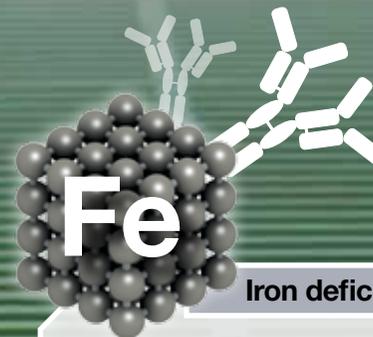
A non-supplemented piglet is anaemic after 4 days.

Without iron supplementation 100% of piglets will have anaemia after 28 days.

However, iron deficiency can also cause invisible problems:

Subclinical Anaemia

- No healthy pigs for comparison
- Low food conversion
- Increased sensitivity to early infections
- Impaired development of immunity
- Poor reaction to vaccines
- Low protection against later infections



Iron deficiency effects on the immune system

- Iron deficiency results in impaired mechanisms of immune responses – mainly the function of macrophages and neutrophils.
- The ratio of lymphocytes/myeloid cells is altered as a sign of deficient humoral immunity.



Main methods to administrate iron

Studies have shown that **iron supplementation allows for prevention of anaemia.**

Several iron formulations are available on the market:

Oral iron/ Natural iron

Limited absorption (5-20%).

Limited control over the dose (habits of consumption of piglets).

Acceptable as complementary tool only.

Iron injection in 3 days old piglets

Control over the dose and good bioavailability.

Iron salts are toxic and must be linked to a carbohydrate.

Diffusion at the injection site must take max 72 h.

✓ **It is the only way for a safe and controlled supplementation.**

✓ **Proven to reduce occurrence of anaemic piglets.**

✓ **200 mg of iron helps improving both bodyweight and haemoglobin level.**



The administration of **injectable iron** to suckling piglets is necessary:

- to prevent anaemia and mortality.
- to reduce the deficiency in several parameters of immunity*.

Iron is needed, but not all injectable irons are equivalent:

Iron must be associated to Dextran to be absorbed.

Dextran is the generic name given to the combination of numerous polymers of dextrose. Depending on the number of associated polymers –the length and the ramification of the molecule– the Dextran has different properties.

GLEPTOSIL®

High performance iron



	Gleptosil®	Classical iron dextran
Composition	Colloidal solution: 100% Dextran heptonic acid + Iron	Mix: iron dextran, hexanoic acid + iron, other polysaccharides
Benefits	96.1% absorption within the first 24 h.	60% absorption after 3 days and 90% between 1 and 3 weeks*

* Reference: product SPC.

The bioavailability of GLEPTOSIL® allows for better iron distribution:

→ **Safe product:** No adverse reactions at the injection site (neither local inflammatory pain reaction, nor calcification at the injection site) compared with classic iron dextran products.

→ **A better weight at weaning.**

→ **Higher haemoglobin levels than with iron dextran.** No risk of subclinical anaemia after injection.

→ **Rapid iron absorption with no muscle staining.** No economical losses at slaughterhouse.

GLEPTOSIL® can be used from the first day of life

Better and faster absorption

95% within 24 hours versus 60% after 3 days for classic iron dextran

- No risk of iron accumulation at the injection site.
- No risk of economic losses at slaughter.
- Higher blood iron level.
- Maximum and rapid bioavailability.
- No risk of subclinical anaemia within the risk period.

Field studies*

- 8 farrow-to-finish farms (France).
- 60 litters monitored/10 piglets each.
- Piglets randomly divided in 2 groups of five: the 'gleptoferron' and the 'iron dextran' group.
- At T0 (0-6 hours after birth): identification and haemoglobin measurement.
- Inoculation of 200 mg of iron (gleptoferron or iron dextran) by IM injection.
- Haemoglobin measured again at weaning with haemoglobin analyser – Hemocue Hb 201 + (T1, 16-31 days after birth, 14-31 days after iron injection).
- **Parameters:**
 - Hb level [Hemocue Hb 201+ (in g/dL)].
 - Weight results:

Haemoglobin levels

Parameter (60 samples)	Average Gleptosil® ± SD	Average iron dextran product ± SD
Hb at birth	8.40 g/dL ± 1.27	8.38 g/dL ± 1.31
Hb at weaning	11.27 g/dL ± 1.10	10.83 g/dL ± 1.42

Hb levels were significantly higher at weaning in the Gleptosil® group (p=0.001), with more homogeneity.

Effect on performance

Parameter (60 samples)	Average Gleptosil® ± SD	Average iron dextran product ± SD
Weight at birth	1.76 kg ± 0.39	1.69 kg ± 0.39
Weight at weaning	7.71 kg ± 1.55	7.42 kg ± 1.50
Weight postweaning + 21/35 days	16.93 kg ± 5.06	16.29 kg ± 4.89

Weight significantly higher at weaning (p=0.007) and after 3 weeks (p=0.02) in the GLEPTOSIL® group.

Piglets that received gleptoferron had a higher level of haemoglobin and higher weight at weaning than the group receiving iron dextran.

Higher bioavailability of gleptoferron.

GLEPTOSIL®

High performance iron

Can be used from the first day of life

Gleptosil® contains iron as gleptoferron, which permits the product to be safely administered to piglets on the first day of life.

High absorption rate with no HAM staining

Over 95% of the Gleptosil® iron injected is taken up within 24 hours, ensuring very high utilization of the dose by the piglet and no ham staining.



Highest blood iron levels

- Gleptosil® produces the highest average blood iron levels following injection.
- Higher haemoglobin levels than iron dextran.

High growth rates

*References:

Ceva Internal Data.
Pollman DS, et al. (1983) J Anim Sci., 56 (3):640-4.
Vermeer JE, et al. (2002) Tijdschr Diergeneeskd. 127 (4):110-4.

GLEPTOSIL®

HIGH PERFORMANCE IRON

Can be used from the first day of life

High absorption rate
with no HAM staining

Highest blood iron levels

High growth rates



GLEPTOSIL® Injectable solution. Composition: Iron dextran (as glucoheptonate) 200 mg Phenol 5 mg Excipient 1 ml. **Indications:** In piglets: treatment and prevention of iron deficiency anemia. **Amount(s) to be administered and administration route:** The product is administered as a single 1 mL (200 mg iron) dose by deep intramuscular injection into the hind limb midway between the stifle joint and the base of the tail. Injections should be administered as follows: FOR THE PREVENTION OF IRON DEFICIENCY ANAEMIA: not later than the third day of life. FOR THE TREATMENT OF IRON DEFICIENCY ANAEMIA: at the onset of clinical anaemia, normally within the first three weeks of life. **Adverse reactions (frequency and seriousness):** there are normally no undesirable side effects associated with the use of the product. Its use does not result in permanent staining of the injected muscle tissue. **Withdrawal period(s):** Meat and offal: 0 days. **Marketing Authorization Holder:** CEVA ANIMAL HEALTH - 10 Avenue Ballastière - 33500 LIBOURNE