

## IRAP (autologous conditioned serum) Therapy

IRAP (Orthokine) was originally developed in Europe, and has been used extensively in Germany.

IRAP (Interleukin-1 Receptor Antagonist Protein) is an anti-inflammatory protein that counteracts the destructive effects of inflammatory proteins such as Interleukin-1 (IL-1) within the inflamed joint.

Levels of IRAP and other anti-inflammatory proteins in the blood can be increased and produced for joint injection by incubating a 50ml sample of blood from your horse for approximately 24 hours in a syringe. The syringe contains glass beads that enhance production of anti-inflammatory proteins including IRAP.



After ~24 hours, the syringe is centrifuged, and the serum collected. The amount of serum collected from each 50ml syringe of blood is usually between 20-30ml. This yields 12-16 doses of IRAP, but the number of doses available for use from each collection is dependent on the specific joints that are treated.

Once the serum has been harvested, it is filtered and then frozen in single dose aliquots. We then submit a small sample of each batch of serum for microbial culture to ensure to the best of our ability that that product that is administered for joint injection is sterile. Injections are available for use ~7 days after original blood collection. Injections are kept frozen until immediately before use.

Indications for use of IRAP/Orthokine®vet-therapy is successfully used for the treatment of orthopedic disorders.

### **Joints**

Acute or chronic inflammation of joints leads to lameness. The

Orthokine®vettherapy

can stop the inflammation with naturally occurring proteins. Long term pain relief as well as protection of the joints can be achieved.

### **Tendon sheaths**

Acute or chronic inflammation of tendon sheaths leads to swelling and

pressure. The consequence is lameness. With the Orthokine®vet-therapy inflammation can be blocked in a natural way. The tissue can regenerate.

### **Tendons**

Acute oder chronic tendinopathies lead to lameness. The Orthokine®vet-therapy can promote healing of tendon tissue. Tendons obtain the opportunity to regenerate with an optimized tissue composition and less scar tissue.

### **Backs**

Acute or chronic inflammation of the spine can lead to back pain. “Kissing Spines“ or nerval disorders can be successfully treated with the Orthokine®vettherapy.

Inflamed tissue can regenerate and analgesia can be reached.

In general 1-3 treatments of the joint are performed, at 8-14 day intervals. The volume injected at each treatment is 1-8ml, depending on the joint. First injection after surgery will usually begin after suture removal, 10-14 days.

After injection, we routinely bandage the joint if possible for ~24 hours, and the horse should be kept on 3 days of stall rest and hand-walking (30-45 minutes). Then typically, unless its a post surgery treatment, 2 days of ponying, followed by 2 days of light riding (30-45 minutes) before resuming normal exercise. The instructions above may vary, depending on the severity of joint disease or injury. Obviously, as with any joint injection, the joint should be monitored carefully for any signs of infection (heat, swelling, increase in lameness) – if you notice any of these signs, please contact your veterinarian immediately. Adverse effects of this product have not been reported after extensive use in people and horses in Europe, though if you have any concerns about your horse after injection you should contact your veterinarian.