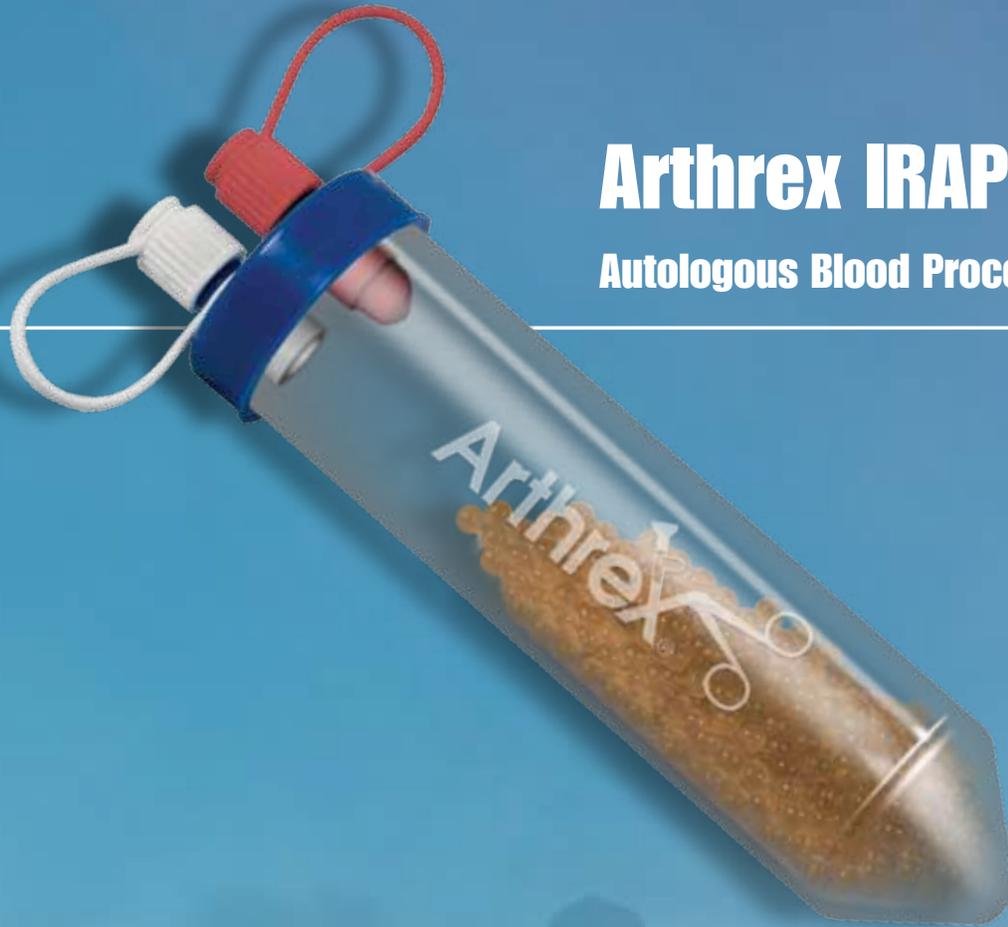


Instructions For Use

Arthrex IRAP™ II

Autologous Blood Processing System



Arthrex
Vet Systems

Preparation of Autologous Blood Serum

Defects in articular cartilage can induce osteoarthritis by causing molecular changes in the synovial fluid. One of the major inducers of osteoarthritis is the general inflammatory cytokine Interleukin-1 (IL-1) which plays a key role in accelerating tissue destruction and the repair mechanisms.

In a healthy joint, IL-1 and Interleukin-1 receptor antagonist (IL-1Ra) are in balanced concentrations. In cases of osteoarthritis, there is not sufficient IL-1Ra produced to block the destructive effects of the increased IL-1. The result is inflammation, joint pain, and finally cartilage destruction.

The following technique explains how to process autologous serum containing increased levels of anabolic and inhibitory cytokines for use at the point of care.



Products

Arthrex IRAP II **VAR-1010**
Kit contains one Arthrex IRAP II device with dual ports, one 60 mL syringe and one butterfly cannula

Incubator **VAR-1002**

Centrifuge **VAR-1003C**

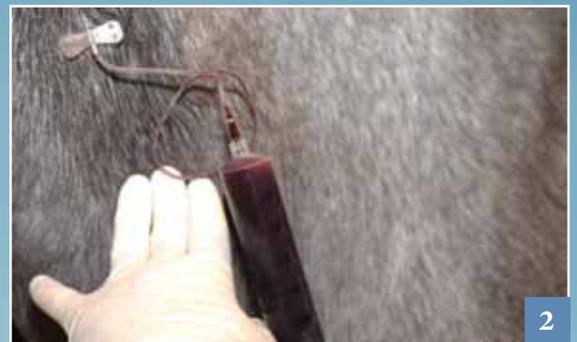
IRAP II Rotor **VAR-1021**

IRAP II Counterbalance **VAR-1012**

Technique



After routine preparation of the jugular vein, put on sterile gloves. Hook up the enclosed butterfly needle of the kit to the 60 mL syringe and use the butterfly needle to puncture the jugular vein.



Slowly draw 50 mL of blood into the syringe. Remove the butterfly cannula from the jugular and detach from the syringe.



Remove the red tethered cap and loosen the white tethered cap on the Arthrex IRAP II device.



Attach the syringe with blood to the red luer and slowly inject the blood into the IRAP II device while holding the devices at about a 60° angle.



Place the incubated IRAP II device into the centrifuge and spin at 4000 rpm for 10 minutes. The centrifuge should contain proper counter weight, if appropriate.



Detach the 60 mL syringe, recap and tighten both tethered caps and then gently rock the blood in the IRAP II device. It is recommended that you label the Arthrex IRAP II device with the owner, patient name, date and time.



Using aseptic technique, remove the white tethered cap from the IRAP II device. Slowly draw the serum into a 20 mL syringe using a spinal needle. Be careful to not pull up any red blood cells.



Place the IRAP II device horizontally, the red cap down and the white cap up, in an incubator for approximately 16-24 hours at 37° C. Do not exceed 24 hours.



Attach a sterile .22 µm millipore filter and a female-female luer lock adapter between the 20 mL syringe containing the serum and an empty sterile 6 mL syringe. Transfer 4 mL of serum to the 6 mL syringe, detach the 6 mL syringe and cap. Repeat until all serum has been transferred through the sterile filter into the 6 mL syringes. Individual doses may be used immediately or frozen at -18° C for use at a later date.

Excess blood should be disposed of and the disposal documented according to applicable regulations. When using at site of treatment, a sterile filter should be placed on the syringe containing the autologous serum, prior to use.

References

1. M. Goldring, *Osteoarthritis and Cartilage: The Role of Cytokines*. Current Rheumatology Reports 2000; 2:459-465.
2. W. Arend, M. Malyak, C. Guthridge, C. Gabay, *Interleukin-1 Receptor Antagonist: Role in Biology*. Annual Review of Immunology 1998; 16:27-55.
3. Thomas Weinberger, Equine Clinic Burg Mueggenhausen, *Postoperative Intraarticular Treatment of Joint Disease in Horses with Autologous Enriched IL-1Ra Protein Solution - A New Biotechnical Approach*.
4. Thomas Weinberger, Equine Clinic Burg Mueggenhausen, *Intraarticular Treatment of Coffin-Joint Disease in Horses with Autologous IL-1 Enriched Protein Solution*.
5. J. Nixon, L. Haupt, D. Frisbie, S. Morisset, C. W. McIlwraith, P. Robbins, S. Ghivizzani, A. Evans, *Enhanced Cartilage Repair by Gene-Mediated Combination Insulin-Like Growth Factor-1/Interleukin-1 Receptor Antagonist Therapy*, Proc Orthop Res Soc, 2002; 276.
6. D. Frisbie, G. Trotter, S. Ghivizzani, P. Robbins, C. Evans, C. W. McIlwraith, *Interleukin-1 Receptor Antagonist (IL-1Ra) Delivery Through Adenoviral Mediated Gene Transfer as a Treatment for Equine Joint Disease*. Proc Orthop Res Soc, 2000.
7. D. Frisbie, S. Ghivizzani, P. Robbins, C. Evans, C. W. McIlwraith, *Treatment of Experimental Equine Osteoarthritis by In Vitro Delivery of the Equine Interleukin-1 Receptor Antagonist Gene*, Gene Therapy, 2002; 9:12-20.



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This Product is for Veterinary Use Only

Caution: Federal law restricts this device for sale to or on the order of a veterinarian.

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