ACP Max™ System

Platelet-Rich Plasma

Arthrex®
Vet Systems

ACP Max™ Syringe System

Features and Benefits

For the safe and rapid preparation of platelet-rich plasma (PRP)

Autologous blood products have become increasingly popular in a number of orthopedic therapies. One of these, PRP, is beneficial because it may release growth factors that may result in a healing response.

- The ACP Max system for autologous conditioned plasma (ACP) allows for rapid and efficient concentration of platelets and growth factors from autologous blood for use at the treatment site
- As the entire preparation process takes place in a closed system, this unique device allows for convenient and safe handling
- More affordable, easier to use, and with a faster processing time than other conventional PRP devices[1]
- White blood cells, specifically neutrophils, are not concentrated within the ACP Max system. These cells can have a detrimental effect on the healing process due to release of degradative proteins and reactive oxygen species[2,3]

Ordering Information

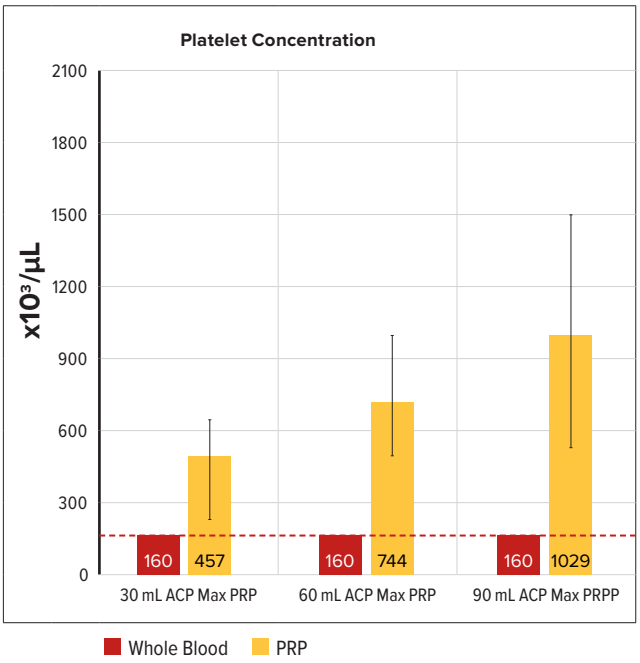
Product Description	Item Number
Centrifuge, HORIZON™ 24-Flex-AV, w/ rotor	00389-129-**001K**
ACP Max PRP System, w/ ACD-A	VABS-**10015**
ACP Max PRP System, w/o ACD-A	VABS-**10013**
ACP Max Counterbalance	VABS-**10017**
ACP Double-Syringe Counterbalance	ABS-**10027**
Centrifuge, Hettich® Rotorfix 32A w/o rotor	1206-**33**
Swing-Out Rotor, 4 × 100 mL Buckets w/ covers	VAR-**1261**
Hettich ACP Max Bucket	**1490**

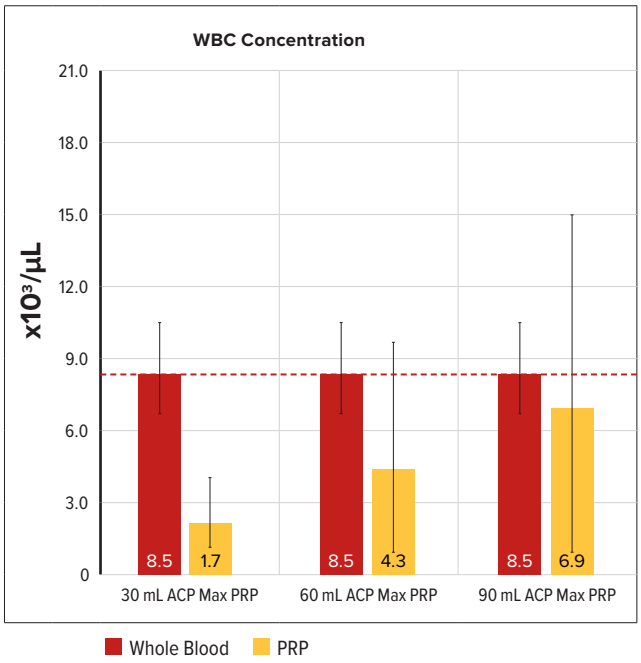
Mechanism of Action

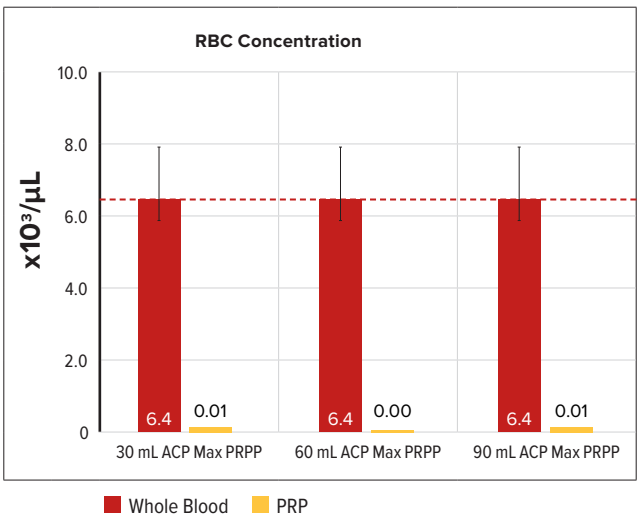
Outside the bloodstream, platelets become activated and release proliferative and morphogenic proteins. They appear to work synergistically to invoke the following benefits[4-7]:

- Induce proliferation and differentiation of various cell types (eg, progenitor cells, osteoblasts, epidermal cells)
- Enhance/modulate production of collagen, proteoglycans, and tissue inhibitor of metalloproteinases (TIMP)
- Stimulate angiogenesis and chemotaxis

In order to evaluate the differences between ACP Max™ PRP and whole blood, PRP was prepared from the venous blood of 6 healthy equine donors. The concentration of platelets, red blood cells (RBCs), and white blood cells (WBCs) were measured with a standard complete blood cell count in 30 mL, 60 mL, and 90 mL volumes of ACP. The ACP Max system produced PRP with 2.8×, 4.6×, and 6.4× as many platelets as in whole blood, respectively.[7] For all processing volumes, there was an average reduction of 19% to 80% WBCs (specifically 63% to 90% reduction of neutrophils) and 99.9% reduction of RBCs.







Directions for Use

1

After opening box, remove upper ACP Max™ tray and set aside.

2

Prepare the blood draw supplies and place vial adaptor on the 30 mL vial of ACD-A. Withdraw 13.3% (4 mL) of ACD-A into a 30 mL syringe.

3

Using appropriate PPE, draw the desired amount of blood for processing. The blood draw kit includes three 30 mL syringes, and the device can process up to 90 mL of blood. Cap the syringes when finished.

4

Open the sterile tray and remove the ACP Max device and syringe guide. Express the air out of the device by depressing the syringe guide.

Seat the ACP Max™ device on the red cap in the top sterile tray and turn clockwise to cap. Pull up to remove.

Remove the cap from the syringe containing blood. Connect the syringe to the blue port of the ACP Max device and slowly fill. Remove the syringe, followed by the syringe guide, by turning counterclockwise.

Open centrifuge lid. Place ACP Max counterweight opposite of the ACP Max device. Ensure counterweight matches the weight of blood to be processed. Set the centrifuge rpm to 3000 and time according to volume. 30 mL = 3 minutes / 60 mL = 6 minutes / 90 mL = 9 minutes.

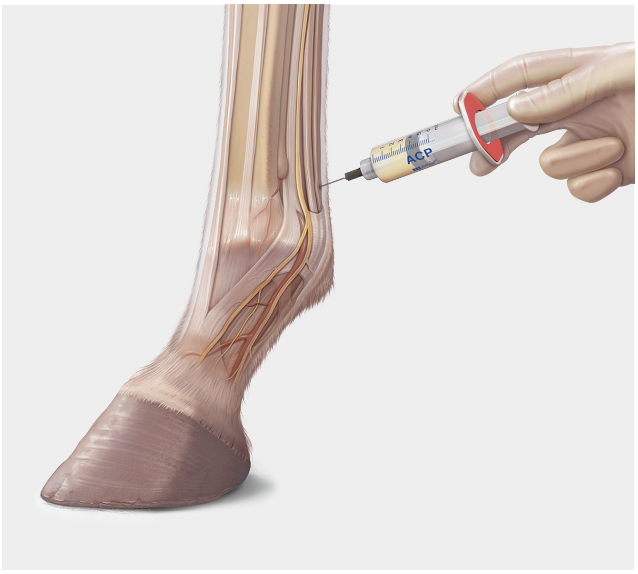
Remove the ACP Max device from centrifuge carefully to avoid mixing the sample. Replace syringe guide by turning clockwise, then attach 30 mL syringes from the sterile layer.

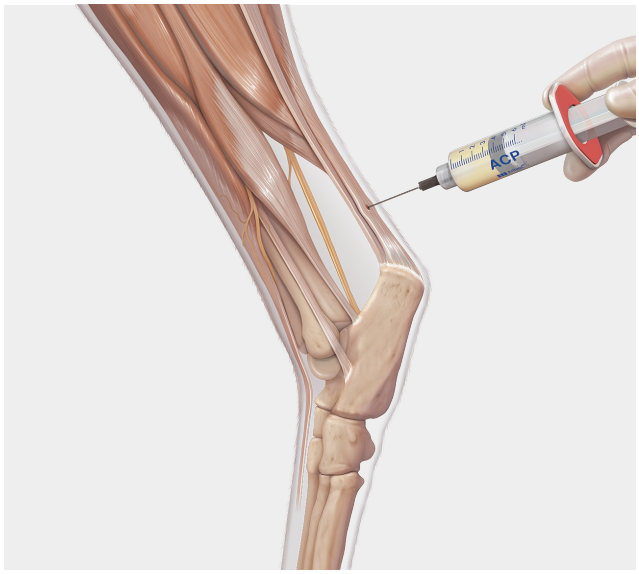
Using the 30 mL syringe from the sterile layer, withdraw the PPP until the plunger is 3 “tick marks” above the buffy coat / RBC interface. Next, place the ACP syringe and fill to full volume (15 mL) by pulling up on the red tabs. Remove ACP syringe and cap with remaining red cap.

Mix the sample by gently inverting the ACP double syringe for 15 to 30 seconds. Place sample in centrifuge. Ensure appropriate counterweight and bucket spacers are in place. Spin at 1500 rpm for 5 minutes.

Remove syringe from the centrifuge carefully to avoid mixing the sample. Transfer PRP from the outer syringe to the inner syringe by carefully depressing the red wings of the syringe. Use at the point of care or freeze for future injections.

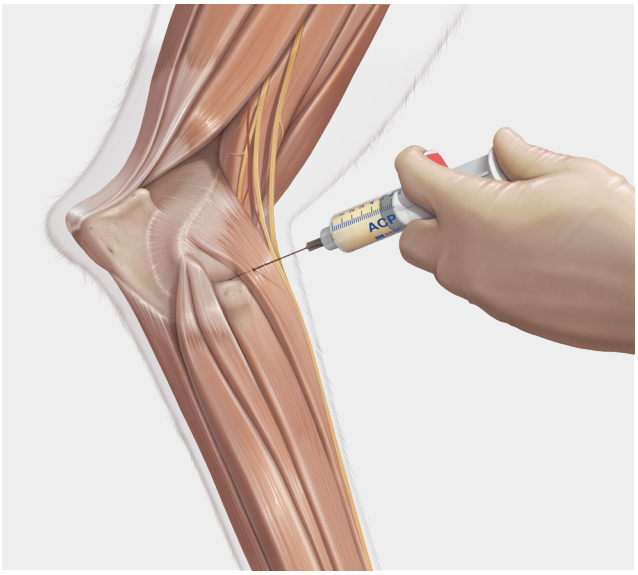
Clinical and Surgical Applications

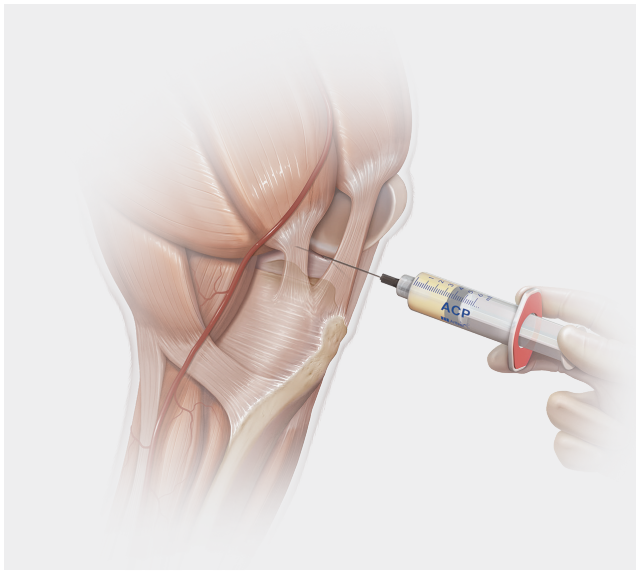




Intratendinous Therapy

Acute or chronic tendonitis and tendinopathy can be treated with PRP injections. PRP can also be used intraoperatively to augment any tendon repair procedure. In a number of in vitro, in vivo, and clinical studies of tendon therapies, PRP has been demonstrated to increase anabolic and extracellular matrix gene expression, induce cell proliferation, improve neovascularization, advance range of motion, and promote early recovery.[8-13]





Intra-articular Therapy

PRP has shown significant promise with respect to intra-articular therapy for treatment of cartilage, the meniscus, and osteoarthritis. Studies have described using PRP to increase chondrocyte extracellular matrix production and synovial hyaluronic acid production and to improve pain and function in patients with osteoarthritis.[14-19]

Osteoarthritis is a catastrophic joint disease that severely affects veterinary clients. It is advantageous for a practice to provide an autologous therapy to help relieve the pain associated with osteoarthritis.

Wound and Ulcer Restoration

Cutaneous ulceration and cutaneous wounds are common problems in veterinary patients. Impairment of the healing process may prevent these lesions from closing. Supplementation with platelets from PRP promotes the release of growth factors and the formation of fibrin matrices, which will induce angiogenesis, extracellular matrix formation, and re-epithelialization, which leads to the eventual closure of these defects.[20-25]

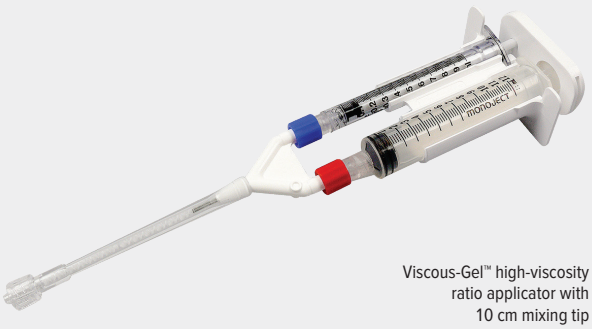
Viscous Delivery Systems

Key Features

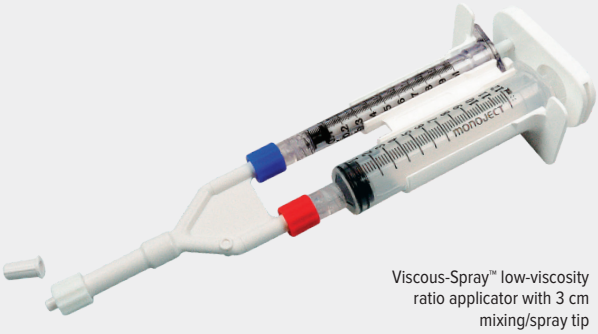
- Use to facilitate mixing and delivery
- Quick and simple to attach and detach
- Easy to fill; no need to disassemble
- 11:1 ratio allows for homologous mixture of two fluids
- Use to provide a low- or high-viscosity fluid
- ACP or PRP can be mixed with allograft or autograft prior to application to an orthopedic surgical site as a spray, gel, or clot
- Extra-long, blunt, fenestrated, and beveled delivery needles

Ordering Information

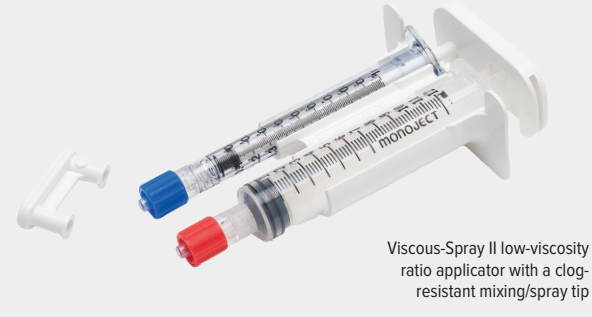
Product Description	Item Number
Viscous-Gel High-Viscosity Applicator	ABS-**10050**
Viscous-Spray Low-Viscosity Applicator	ABS-**10051**
Viscous-Spray II Low-Viscosity Applicator	ABS-**10052**
Fenestrated Delivery Needle	ABS-**20000**
Tuohy Delivery Needle	ABS-**21000**
Cannula Bending Tool	AR-**6650**



Viscous-Gel™ high-viscosity ratio applicator with 10 cm mixing tip



Viscous-Spray™ low-viscosity ratio applicator with 3 cm mixing/spray tip



Viscous-Spray II low-viscosity ratio applicator with a clog-resistant mixing/spray tip

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