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 platelet-rich plasma (PRP) allows for rapid and efficient concentration of platelets and growth factors from autologous blood for use at the treatment site.
- This convenient, off-the-shelf kit includes blood draw supplies and a sterile-packaged equipment tray, allowing for safe handling in an aseptic environment.
- The system is economical, easier to use, and offers 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]

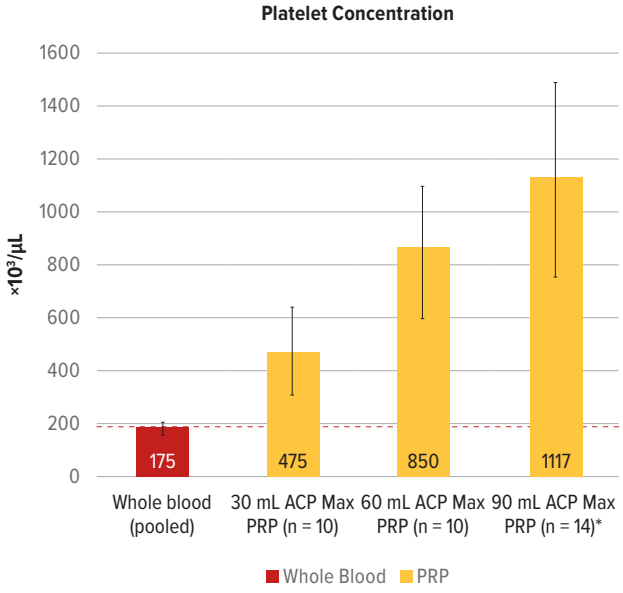
Horizon 24 Flex AV centrifuge, w/ rotor	00389-129-001K
ACP Max PRP system, w/ ACD-A	VABS-10015
ACP Max PRP system, w/o ACD-A	VABS-10013
ACP Max counterbalance	VABS-10017
Counterbalance for Arthrex ACP® double syringe	VABS-10027
Hettich Rotofix 32 A centrifuge, w/o rotor	1206-33
Swing-out rotor, 4 mL × 100 mL buckets, w/ covers	VAR-1261
Hettich ACP Max bucket	1490

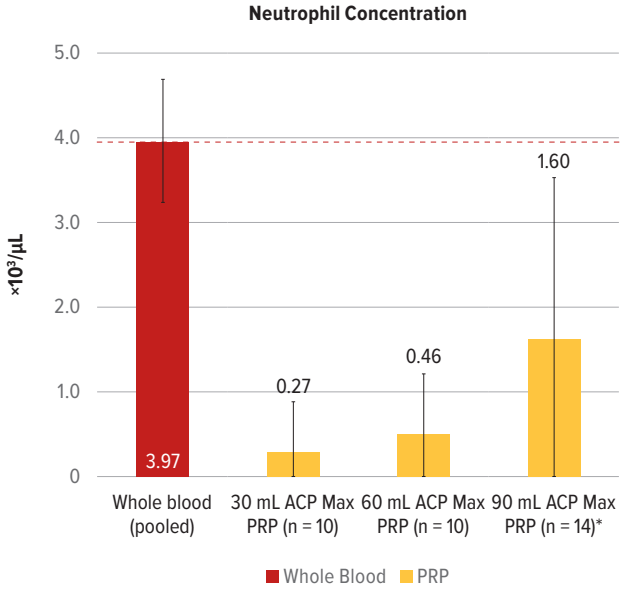
Mechanism of Action

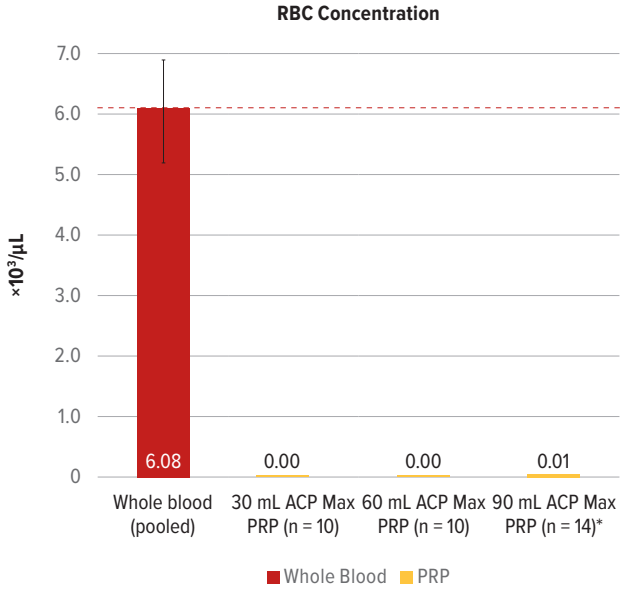
Outside the bloodstream, platelets become activated and release proliferative and morphogenetic proteins. They appear to work synergistically to invoke the following benefits[4-7]:

- 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

To compare ACP Max™ PRP with whole blood, PRP was prepared from venous blood collected from 10 healthy equine donors. Platelet, red blood cell (RBC), and white blood cell (WBC) concentrations were measured using a standard complete blood count. It was found that PRP derived from 30 mL of whole blood contained 2.8 times more platelets, while PRP derived from 60 mL of whole blood contained 5.0 times more platelets and PRP derived from 90 mL of whole blood contained 6.4 times more platelets. Neutrophil counts were reduced by 61% to 94%, depending on the processing volume, and RBCs were reduced by 99.9%.







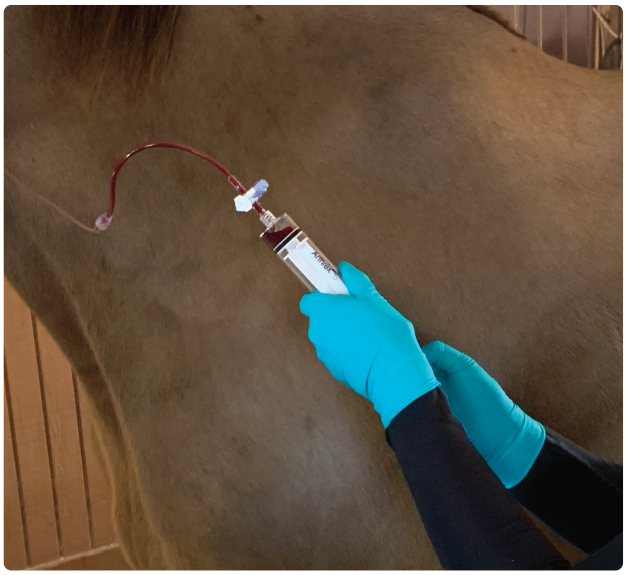
Directions for Use

1

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

2

Prepare the blood draw supplies and place vial adapter 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. Expel the air out of the device by depressing the syringe guide.

5a

5b

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

6a

6b

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.

7a

7b

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

8a

8b

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

9a

9b

Using the 30 mL syringe from the sterile layer, withdraw the PPP until the plunger is 2 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 the ACP syringe and cap with the remaining red cap.

10

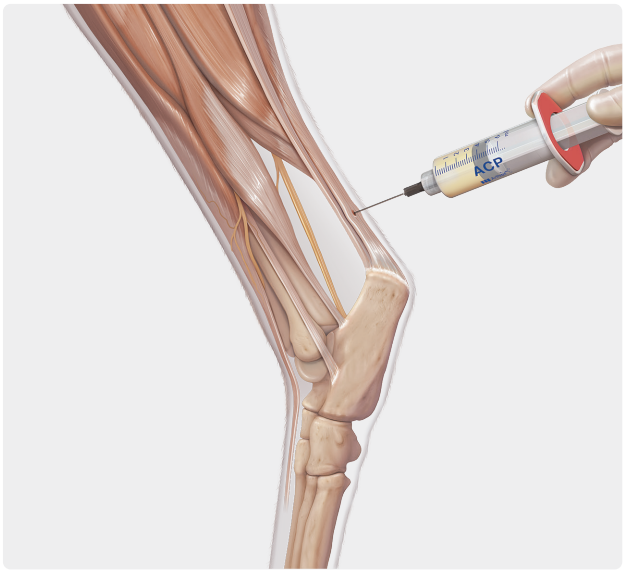
Mix the sample by gently inverting the Arthrex ACP® double syringe for **15 to 30 seconds**. Ensure the appropriate counterweight and bucket spacers are in place. Place the sample in the centrifuge. Spin at 1500 rpm for 5 minutes.

11a

11b

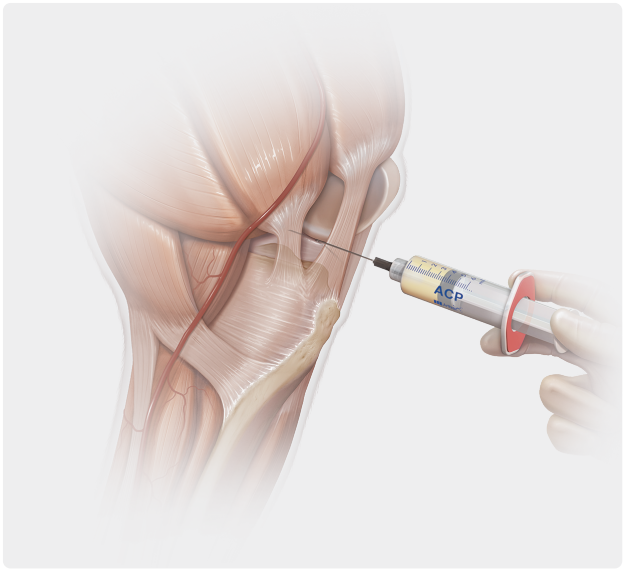
Remove the syringe from the centrifuge carefully to avoid mixing the sample. Transfer the PRP from the outer syringe to the inner syringe by carefully depressing the red wings of the syringe. Use at the point of care.

Potential Clinical and Surgical Applications



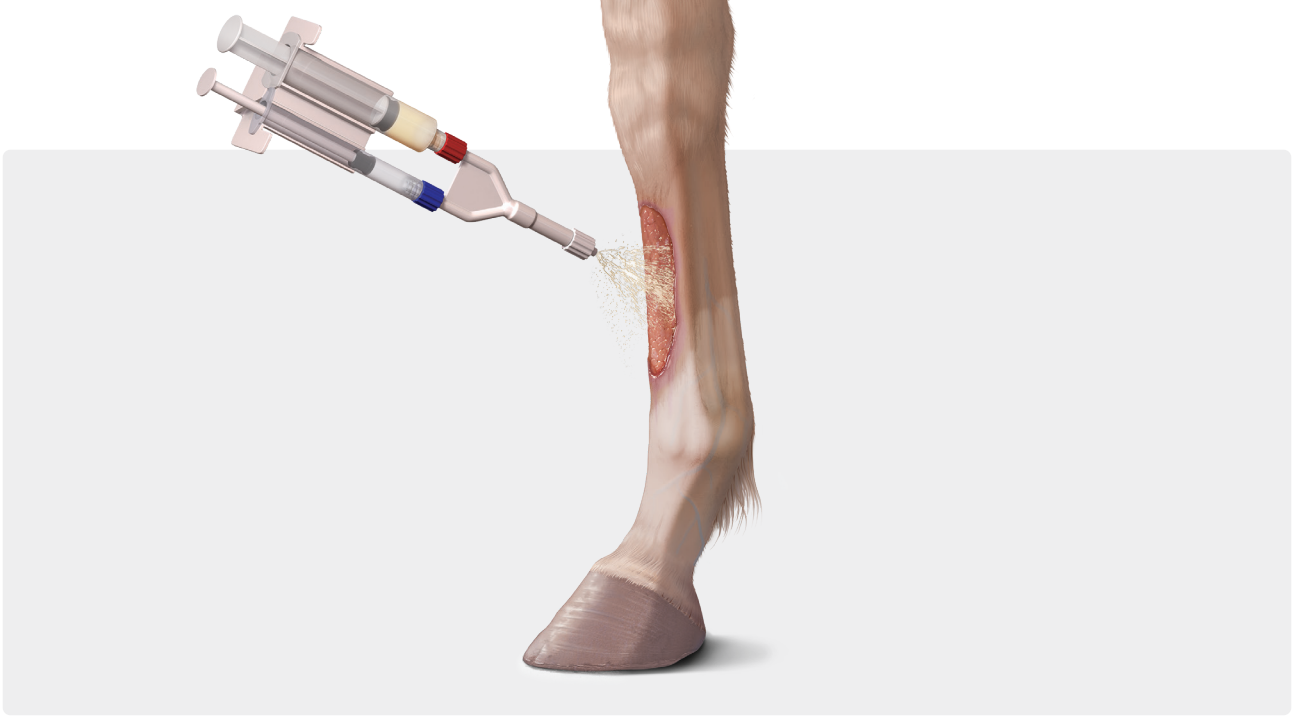
Intratendinous Therapy

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]

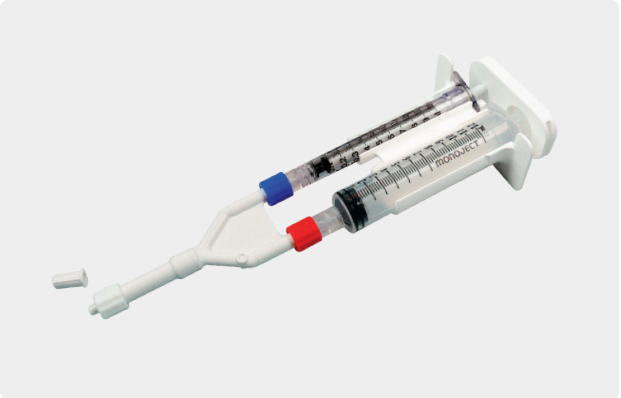
Viscous Delivery Systems

Key Features

- Used to facilitate mixing and delivery
- Quick and simple to attach and detach
- Easy to fill; no need to disassemble
- 11:1 calcium chloride mixture allows for autologous thrombin
- Used to provide a low- or high-viscosity fluid
- ACP Max™ PRP can be used to rehydrate autograft or allograft bone prior to application in an orthopedic site
- Extralong, blunt, fenestrated, and beveled delivery needles

Viscous-Gel applicator, high viscosity	ABS-10050
Viscous-Spray applicator, low viscosity	ABS-10051
Viscous-Spray II applicator, low viscosity	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

References

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This is not veterinary advice and Arthrex recommends that veterinarians be trained in the use of any particular product before using it in surgery. A veterinarian must always rely on his or her own professional clinical judgment when deciding whether to use a particular product. A veterinarian must always refer to the package insert, product label and / or instructions for use before using any Arthrex product. Products may not be available in all markets because product availability is subject to the regulatory and / or veterinary practices in individual markets. Please contact your Arthrex representative if you have questions about availability of products in your area.

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