

# Arthrex ACP<sup>®</sup> Double Syringe

ACP – Autologous Conditioned Plasma



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## ACP Double Syringe



### Introduction

Autologous blood products like blood plasma have created a growing interest for use in a number of orthopedic therapies. The healing effects of plasma are supported by growth factors released by platelets. The ACP (Autologous Conditioned Plasma) double syringe system is used for sterile separation of nonhomogenous liquids. This device will allow the withdrawal of blood from the human body using a commercially available cannula with LuerLock connection.

### Features and Benefits

- Two in one – unique system for the preparation of autologous conditioned plasma
- ACP preparation with the Arthrex ACP double syringe can be performed within minutes
- The ACP system can be used in a clinic or under sterile conditions in an OR setting, as the whole preparation process takes place in a closed system
- The double syringe design allows for easy, convenient and safe handling

### Application Examples

#### Acute

- Tendon rupture or tear, e.g. Achilles tendon, rotator cuff
- Ligament rupture or tear, e.g. cruciate ligament, ankle ligaments
- Muscle tear
- Meniscal lesion

#### Chronic

- Osteoarthritis, cartilage lesion
- Tendinopathy, e.g. Achilles tendon, elbow
- Tendon irritation, e.g. patellar tendon
- Plantar fasciitis irritation
- Subacromial syndrome

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## Mechanism of ACP

Using the described method with the Arthrex ACP double syringe to prepare blood, the plasma contains an increased platelet concentration of about 2 to 3 times.<sup>7</sup> Outside the blood-stream, platelets become activated and release proteins for example growth factors. These growth factors are known to be relevant for healing in a variety of tissue types and they appear to work synergistically.<sup>1,2,3</sup>

## Major Effects of Growth Factors

- Induce proliferation and differentiation of various cell types (e.g. osteoblasts, chondroblasts)<sup>4</sup>
- Enhance production of matrix (e.g. collagen, proteoglycan production)
- Stimulate angiogenesis and chemotaxis

As described in several studies the white blood cells are not concentrated using the ACP double syringe and the described spin regime.<sup>5,6,7</sup> The supernatant should not contain red blood cells.<sup>7,8</sup> The addition of ACP significantly increased the cell proliferation of muscle, tendon and bone cells.<sup>8</sup>

In clinical trials, a significant positive effect of ACP could be observed on the treatment outcome for the following indications:

- Cartilage damage / osteoarthritis<sup>9, 10</sup>
- Epicondylitis<sup>11, 12, 13</sup>
- Patellar tip syndrome<sup>14, 15</sup>
- Plantar fasciitis<sup>16, 17</sup>
- Achilles tendinopathy<sup>18</sup>
- Partial rupture of the rotator cuff<sup>19</sup>

## Bucket, Centrifuge, Cart for Centrifuge (Optional)



Centrifuge



Bucket



Cart for centrifuge (optional)

# Application



**Accessories:**  
ACP double syringe, red cap, anticoagulant (optional), centrifuge, bucket, counterweight



**Note:** Take the double syringe out of the packaging, tighten the inner syringe (turn it clockwise) (1) and push both plungers forward until the stop (2).

**Optional:** Withdraw approximately 1.5 ml anticoagulant into the syringe by drawing back only the plunger of the outer syringe that is colored red. If the ACP is injected within 30 minutes after withdrawing, the use of anticoagulant is not required.



Slowly and carefully withdraw the blood by pulling back on the wings that are colored red. Fill the syringe to a maximum of 15 ml of venous blood and seal the syringe with the red cap.

Using an anticoagulant gently rotate the syringe in order to mix blood and anticoagulant.



Place the syringe into one bucket and an appropriately sized counterbalance in the opposite bucket. Close the buckets with a lid.

The buckets (incl. lids) can be sterilized before usage to maintain sterile conditions.

# Application



Run the centrifuge at 1500 rpm for 5 minutes.

**Note:** Remove the syringe taking care to keep it in an upright position (red cap downwards) to avoid mixing.



In order to transfer the supernatant (ACP) from the larger outer syringe into the small inner syringe, slowly push down on the outer syringe while slowly pulling up the plunger of the small inner syringe.



Unscrew the small inner syringe and place a needle onto it. The ACP is ready for use at the point of care.

**Optional:** The ACP can also be transferred into a sterile cup in the sterile field for intraoperative use.



# Ordering Information

Description	Item number
Arthrex ACP® kit, series I	ABS-10011
Arthrex ACP® kit, series II	ABS-10012
Arthrex ACP® double syringe	ABS-10014
Centrifuge Hettich Rotofix 32 with swing out rotor, 220 V	1206-Art
Centrifuge Hettich Rotofix 32 with swing out rotor 1324, 110 V	1206-01-Art
Bucket with screw cap for centrifuge (spare)	ABS-10022
Screw cap for ABS-10022 (spare)	ABS-10023
Counterweight for centrifugation of ACP double syringe, 15 ml	ABS-10027
Viscous-Gel™ high viscosity ratio applicator with 10 cm mixing tip	ABS-10050
Viscous-Spray™ low viscosity ratio applicator with 3 cm mixing / spray tip	ABS-10051
Fenestrated delivery needle	ABS-20000
Tuohy delivery needle, 17 Gauge 16"	ABS-21000
Cart for centrifuge	AR-5995-ABS01

*An anticoagulant can be purchased on request.*

## References

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This description of technique is provided as an educational tool and clinical aid to assist properly licensed medical professionals in the usage of specific Arthrex products. As part of this professional usage, the medical professional must use their professional judgment in making any final determinations in product usage and technique. In doing so, the medical professional should rely on their own training and experience and should conduct a thorough review of pertinent medical literature and the product's Directions For Use.

