

Arthrex Platelet-Rich Plasma Processing Solutions

Product Brochure



Arthrex® 

Arthrex Platelet-Rich Plasma Processing Solutions

Arthrex offers a comprehensive lineup of distinctive platelet-rich plasma (PRP) processing solutions, including the Angel® concentrated platelet-rich plasma (cPRP) system, the Arthrex ACP® double-syringe system, and the ACP Max™ system. Each system offers the unique benefit of creating a PRP formulation to meet your procedural needs.

Angel System

Customize and automate your PRP formulations with a single touch. The Angel system can process 40 to 180 mL of whole blood (WB) or bone marrow aspirate.

Arthrex ACP Double-Syringe System

Conveniently process up to 15 mL of WB for quick and safe PRP preparation.

ACP Max PRP System

Effectively produce a PRP solution with up to 12× increase in platelet concentration from 30, 60, or 90 mL of WB.¹⁻³



PRP Systems Backed by Data

Arthrex is committed to its mission of Helping Surgeons Treat Their Patients Better® by providing innovative and clinically proven products. In line with this mission, we offer several white papers showcasing the results of tests and analysis of each of our PRP systems.

To read the latest white papers for each PRP system, follow each QR code and click the View Scientific Evidence button.



Arthrex ACP® Double-Syringe System

The Arthrex ACP system allows for the rapid and efficient concentration of platelets and growth factors from autologous blood right at the patient's point of care. Through a plasma-based process, the system produces a powerful PRP formulation from only a small sample of blood in a single-spin process. Additionally, the Arthrex ACP system does not concentrate white blood cells (WBCs), specifically neutrophils, which can have a detrimental effect on the healing process.



Features and Benefits

- Straightforward, single-spin PRP preparation in only 5 minutes
- Conveniently process up to 15 mL of WB
- Double-syringe design ensures safe handling as the entire preparation process takes place within a closed system
- Anticoagulant use is optional if PRP is used within 30 minutes of blood withdrawal
- Compatible with Arthrex PRP centrifuges



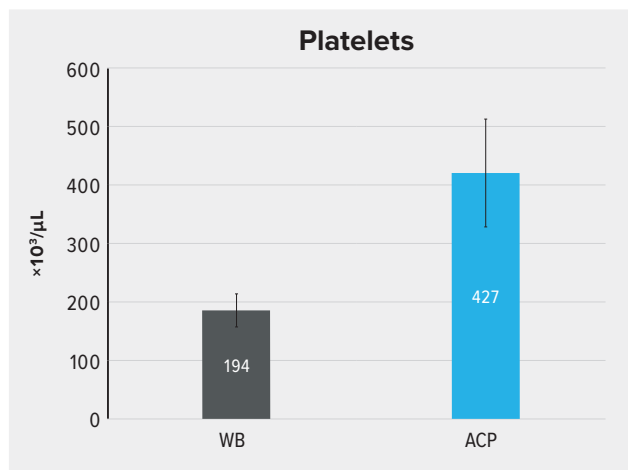
Cellular Concentrations With Autologous Conditioned Plasma

In a study to evaluate the differences in cellular concentrations between autologous conditioned plasma (ACP) and WB, ACP was prepared from the venous blood of 20 healthy donors and the concentrations of platelets, red blood cells (RBCs), and WBCs were measured with a standard complete blood cell count.

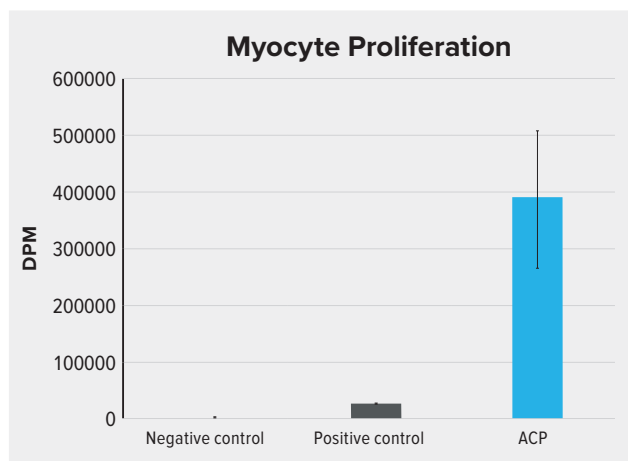
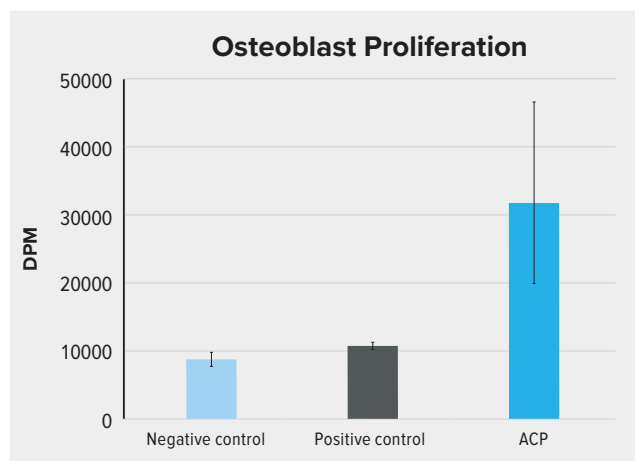
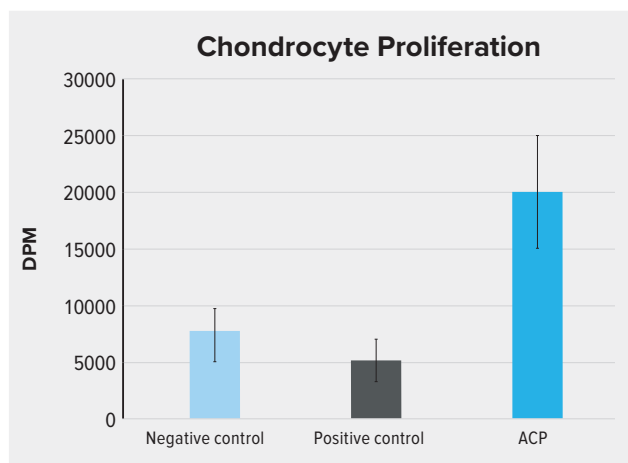
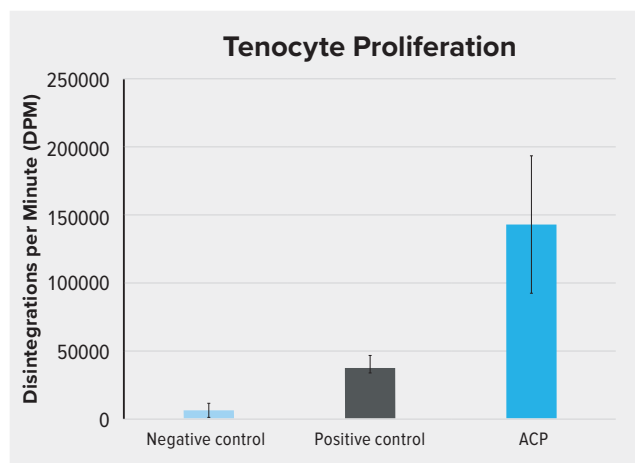
The Arthrex ACP system concentrated platelets at over 2× over baseline.^{4,5}



Read the full analysis



To assess the impact of ACP on specific cell lines, in vitro culture experiments were conducted using human tenocytes, chondrocytes, osteoblasts, and myocytes. Following a 5-day culture period, ACP-treated tenocytes, osteoblasts, chondrocytes, and myocytes showed increased proliferation compared to positive and negative controls ($P < .05$), with various treatments applied to the cells. This study shows ACP's ability to increase cell proliferation in an in vitro model for different relevant cell types.⁶



Ordering Information

Product Description	Item Number
Arthrex ACP® double syringe w/ cap	ABS-10010S
Arthrex ACP Series I blood draw kit	ABS-10011
Arthrex ACP Series I blood draw kit w/ ACD-A	ABS-10011T
Arthrex ACP Series II blood draw kit	ABS-10012

Kit Configurations

- The Arthrex ACP Series I ACP Blood Draw Kit contains one syringe, along with everything needed for a standard blood draw.
- The Arthrex Series I Kit with ACD-A includes an anticoagulant to prevent coagulation for up to 4 hours.
- The Arthrex ACP Series II Kit includes a second syringe for additional PRP volume.

Arthrex ACP Series I Kit Components (ABS-10011)

Product Description	Quantity
Arthrex ACP double syringe	1
Double-syringe Luer cap	1
Tourniquet, disposable, latex-free	1
Alcohol pad	1
Angel wing infusion set, 19 ga	1
Gauze sponge, 2 in × 2 in	1
Bandage, latex-free	1
Patient label	2



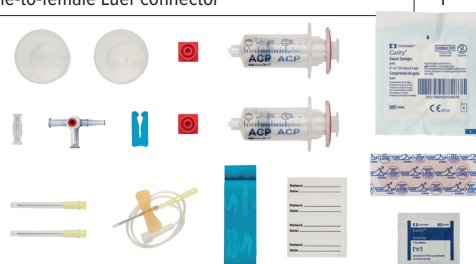
Arthrex ACP Series I Kit With ACD-A Components (ABS-10011T)

Product Description	Quantity
Arthrex ACP double syringe	1
Double-syringe Luer cap	1
Vial ACD-A, 30 mL	1
Tourniquet, disposable, latex-free	1
Alcohol pad	1
Angel wing infusion set, 19 ga	1
Gauze sponge, 2 in × 2 in	1
Bandage, latex-free	1



Arthrex ACP Series II Kit Components (ABS-10012)

Product Description	Quantity
Arthrex ACP double syringe	2
Double-syringe Luer cap	2
Tourniquet, disposable, latex-free	1
Alcohol pad	1
Angel wing infusion set, 19 ga	1
Gauze sponge, 2 in × 2 in	1
Bandage, latex-free	1
Patient label	4
Hypodermic needle, 20 ga, 1.5 in	2
3-way stopcock	1
Side-pinch clamp	1
40 mL cup	2
Female-to-female Luer connector	1

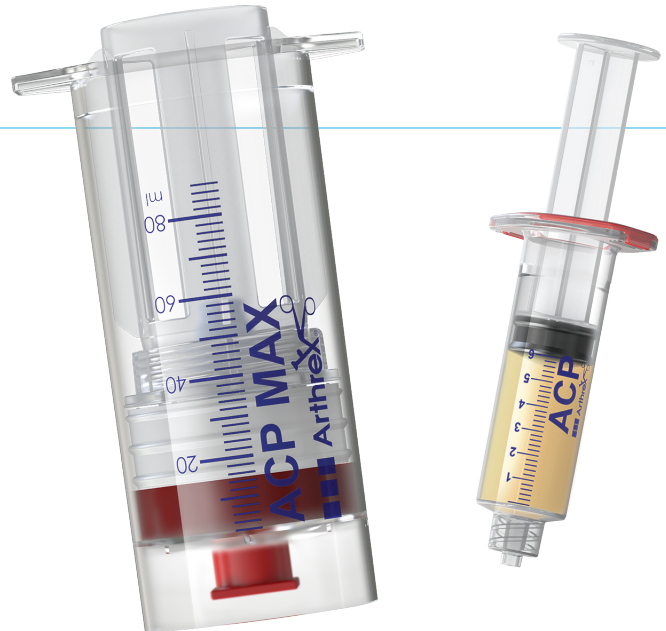


ACP Max™ PRP System

Building on the innovative and proven technology of the Arthrex ACP® double-syringe system, the ACP Max system offers a unique PRP formulation that significantly increases platelet levels while reducing neutrophils. The ACP Max system maximizes platelet concentration by using a dual-spin regimen. The first spin cycle separates the platelet-poor plasma (PPP) and creates a buffy-coat layer. This process removes the PPP, allowing the second spin to concentrate platelets, which results in a highly concentrated PRP solution depleted of RBCs and granulocytes, including neutrophils.¹⁻³

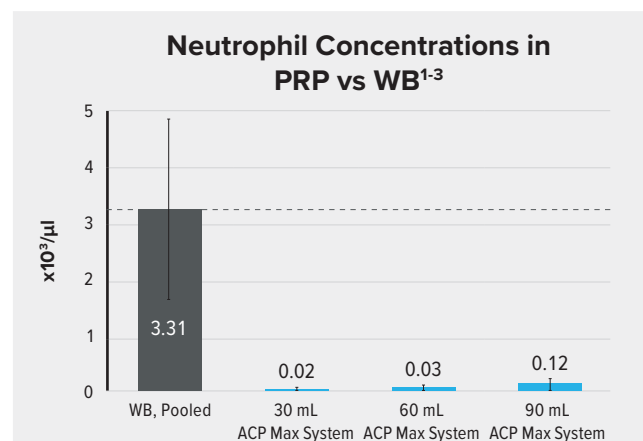
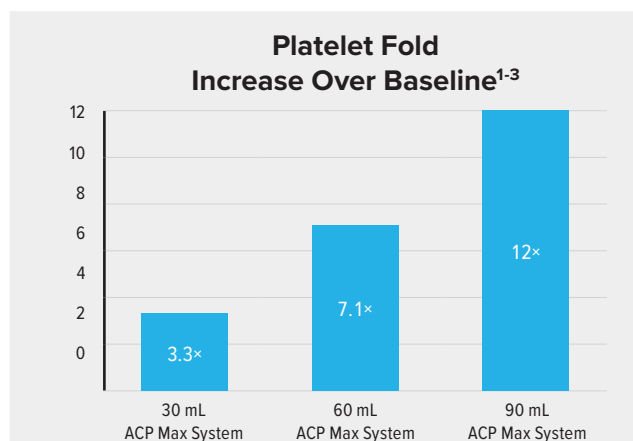
Features and Benefits

- Processing capabilities for volumes of 30, 60, and 90 mL
- Triple-syringe design allows for high concentration of platelets while reducing neutrophil concentration¹⁻³
- System is compatible with current Arthrex centrifuges



Cellular Analysis

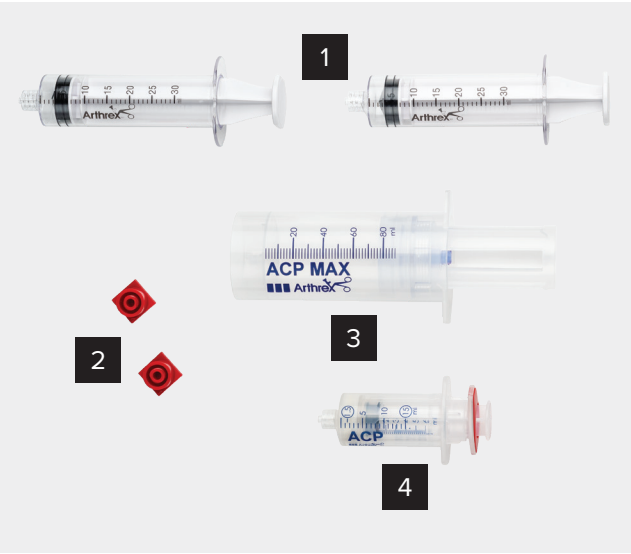
The ACP Max system effectively concentrates platelets up to 12× over baseline while reducing neutrophil concentration by up to 98.99%.



Ordering Information

Product Description	Item Number
ACP Max™ PRP system	ABS-10013-B
ACP Max PRP system w/o ACD-A	ABS-10013
ACP Max PRP system w/ ACD-A	ABS-10015

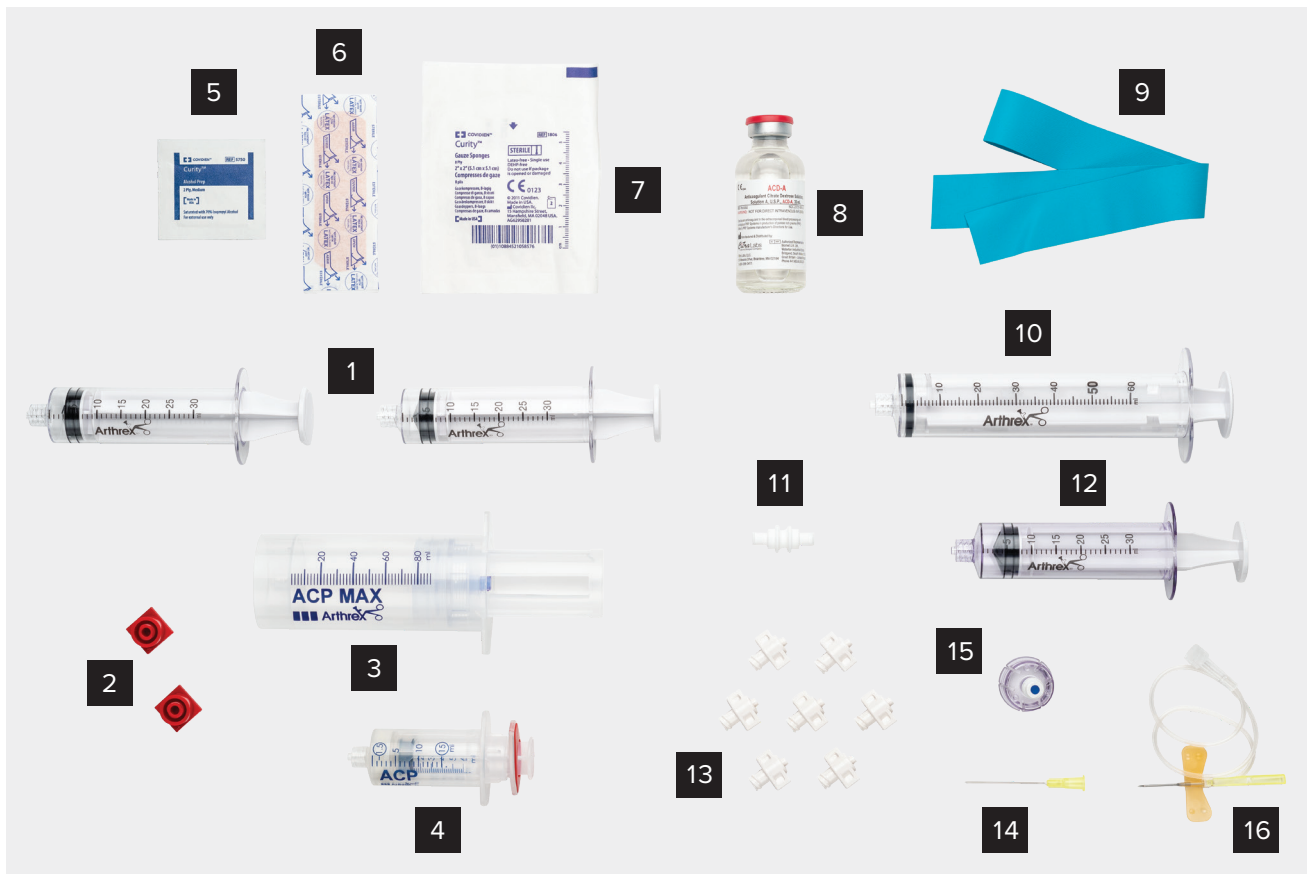
ACP Max PRP Kit (ABS-10013-B)



Pic.	Qty.	Description
1	2	30 mL syringe for PPP withdrawal
2	2	Luer caps, red
3	1	ACP Max syringe
4	1	Arthrex ACP® double syringe



ACP Max™ PRP Kit With ACD-A (ABS-10015)



Inner Blister Tray (sterile)

Pic.	Qty.	Description
1	2	30 mL syringe for PPP withdrawal
2	2	Luer caps, red
3	1	ACP Max syringe
4	1	Arthrex ACP® double syringe

Outer Blister Tray

Pic.	Qty.	Description
5	1	Alcohol pad
6	1	Bandage, latex-free
7	1	Gauze sponge
8	1	ACD-A vial
9	1	Tourniquet
10	1	60 mL blood draw syringe
11	1	Female-to-female Luer connector
12	1	30 mL blood draw syringe
13	7	Male-to-female Luer caps, white
14	1	Hypodermic needle for ACD-A withdrawal, 20 ga
15	1	Vial adapter (another option for ACD-A withdrawal)
16	1	Angel wing infusion set

Note: ABS-10013 contains the same contents as ABS-10015, excluding ACD-A.

Angel® cPRP System

The Angel system is the only fully automated system that uses 3-sensor technology (3ST) and one-button automation to prepare customized formulations of PRP from WB or bone marrow aspirate (BMA).

The Angel system uses the principle of flow cytometry, or cell light absorption, to achieve cell separation with unmatched precision and ease. The Angel system can deliver a platelet concentration up to 18× the baseline with a leukocyte concentration that can be adjusted to fit your clinical needs.



Features and Benefits



- Flexible processing volume of 40 to 180 mL
- Proprietary platelet sensor system, adjustable platelet concentrations, and adjustable WBC concentrations
- Each processing kit can process up to 3 cycles of WB or a mixture of blood and BMA on the same patient, for a maximum total processing volume of 180 mL per patient
- Programmable; can store up to 30 custom processing protocols
- Closed system that delivers PRP, PPP, and RBCs into separate, sterile compartments

Angel System Calculator

The online Angel system calculator is a valuable tool that allows health care providers to gain an understanding of the estimated cellular fold increase and concentration levels of a final PRP solution.

This valuable, innovative calculator highlights the power of a custom, tailored PRP solution. By leveraging more than 8000 data points, the app calculates the expected cellular concentrations of the Angel system's final PRP output based off user-adjustable inputs for starting WB volume, hematocrit percentage, and desired final PRP volume.

Input	Output
Starting Whole Blood Volume: 60 mL	PLT Fold Increase (x): 3.83
Hematocrit Percentage: 2%	WBC Fold Increase (x): 0.50
Final PRP Volume: 5 mL	NE Fold Increase (x): 0.28



Visit **AngelApp.Arthrex.com** to use the Angel system calculator.



Adjustable Cellular Concentrations

The Angel® system offers adjustable platelet and leukocyte concentrations, flexible processing volumes, and consistent PRP output.

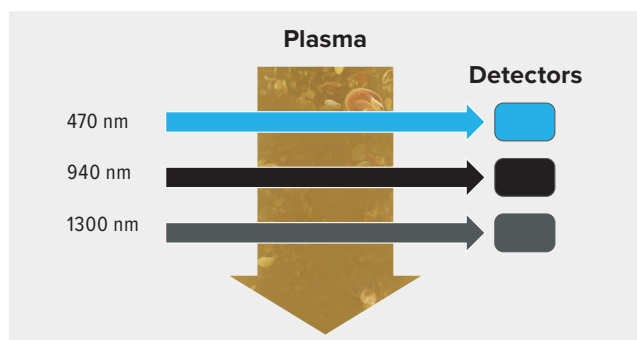


Automated PRP Collection

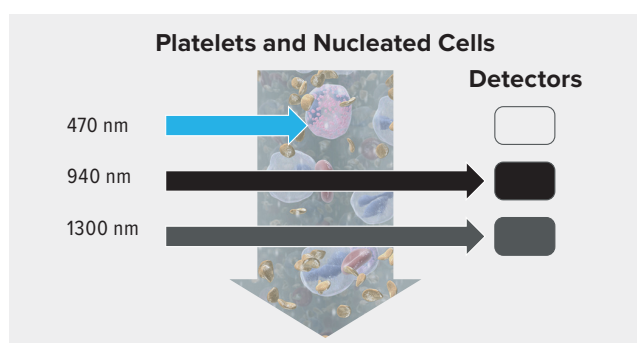
The Angel system seamlessly delivers PRP, PPP, and RBCs into separate sterile compartments. No buffy coats to resuspend or plasma to decant.

Three-Sensor Technology (3ST)

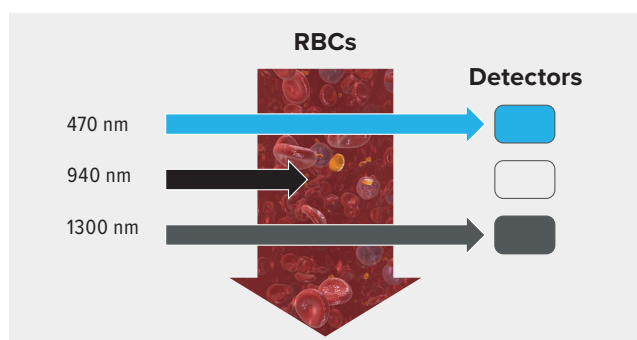
High-specificity 3ST light sensor technology accurately separates blood components using cell-specific wavelengths of light to increase cellular yields.



When plasma is present, all 3 light beams pass through and contact the detector. The Angel device recognizes the presence of plasma and turns the valve to collect PPP. The PPP is deposited in the PPP collection reservoir.



When platelets and nucleated cells are present, the 470 nm wavelength of light is absorbed. The absence of the 470 nm beam on the detector alerts the Angel system to stop collecting PPP; it will then actuate the valve to collect PRP. The PRP is directed into the collection syringe on top of the unit.

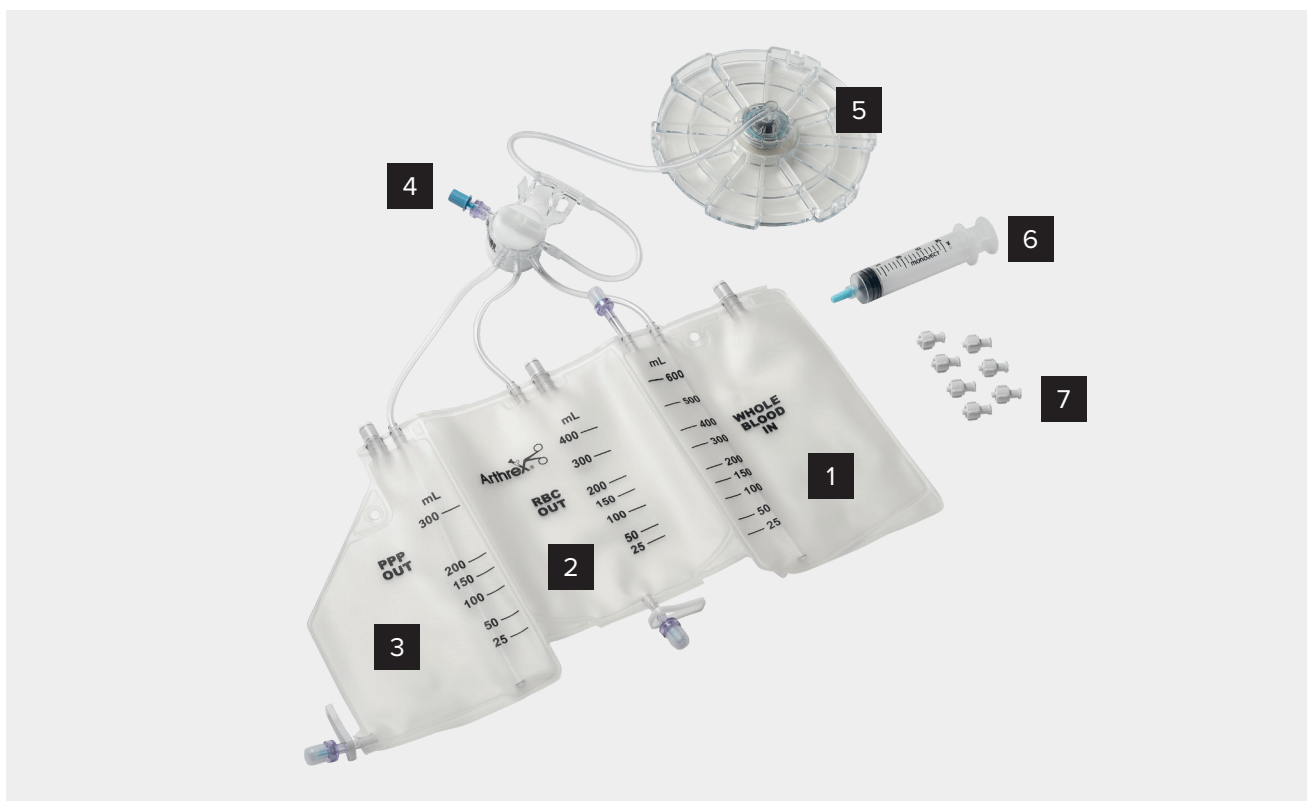


The 940 nm wavelength is absorbed by RBCs. When the detector no longer detects the 940 nm beam, the Angel system will allow a percentage of RBCs to pass through into the PRP collection syringe. The percentage of RBCs collected in the PRP syringe is determined by the hematocrit setting selected by the operator.

Ordering Information

Product Description	Item Number
Angel® system centrifuge	ABS-10060
Angel system centrifuge, refurbished	ABS-10060R
Angel PRP kit w/ ACD-A and blood draw components	ABS-10061T
Angel kit	ABS-10063

Angel cPRP Processing Set (ABS-10063)



Set Contents

Pic.	Qty.	Description
1	1	WB input compartment
2	1	RBC output compartment
3	1	PPP output compartment
4	1	Manifold valve and PRP output
5	1	Variable-volume separation chamber
6	1	20 mL Luer lock syringe
7	7	Male-to-female Luer plugs

References

1. Arthrex, Inc. Data on file (APT-5368). Naples, FL; 2021.
2. Arthrex, Inc. Data on file (APT-5535). Naples, FL; 2022.
3. Arthrex, Inc. Data on file (APT-5756). Naples, FL; 2022.
4. Arthrex, Inc. Data on file (APT-4153). Naples, FL; 2019.
5. Arthrex, Inc. Data on file (APT-2470). Naples, FL; 2014.
6. Arthrex, Inc. Data on file (LA0810). Naples, FL; 2019.



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. Postoperative management is patient-specific and dependent on the treating professional's assessment. Individual results will vary and not all patients will experience the same postoperative activity level or outcomes.



Arthrex manufacturer,
authorized representative,
and importer information
(Arthrex eIFUs)



US patent information

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