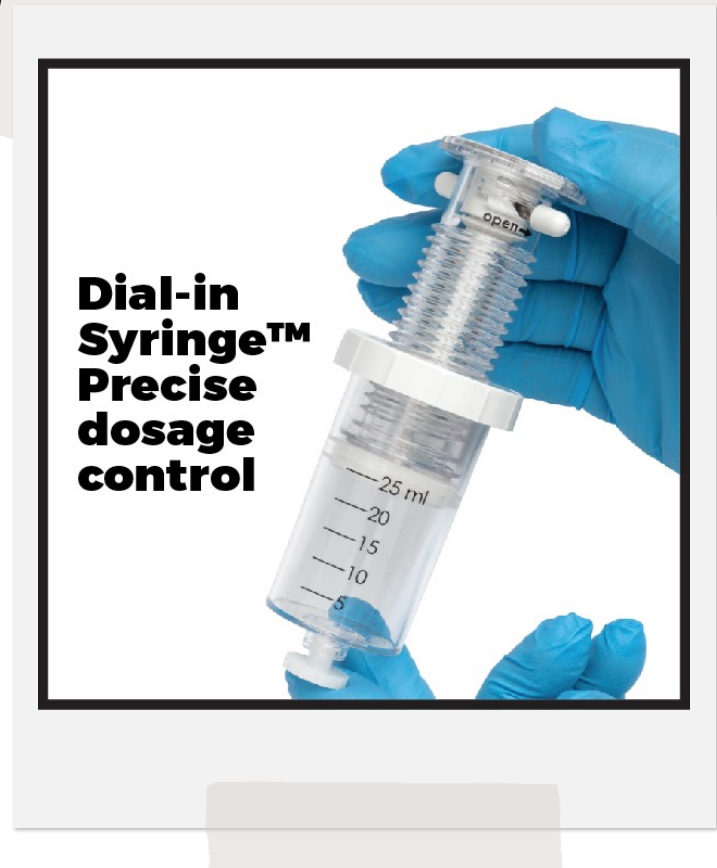


ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)



GENESIS
BIOLOGICS



DEVELOPED TO CARE FOR AND PROTECT THE PLATELETS

The **Genesis AAPS** enables safe, quick, and easy separation of blood components into customizable platelet concentrations for specific procedures in a single platform.

Designed for use within the practitioner's office, the **Genesis AAPS** with Dial-In technology delivers a tailored concentration approach for a variety of patient treatment applications.



GENESIS
BIOLOGICS



REGULATORY STATUS

510(k) Number: BK200449

Device Name: Adaptive

Indications for Use: Genesis AAPS is indicated to be used for the safe and rapid preparation of autologous platelet rich plasma (PRP) from a small sample of peripheral blood at the patient's point of care. The PRP is mixed with autograft and/or allograft bone prior to application to a bony defect for improving handling characteristics.



GENESIS
BIOLOGICS



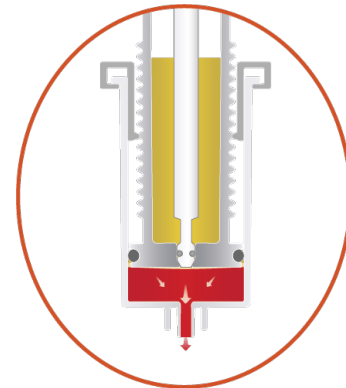
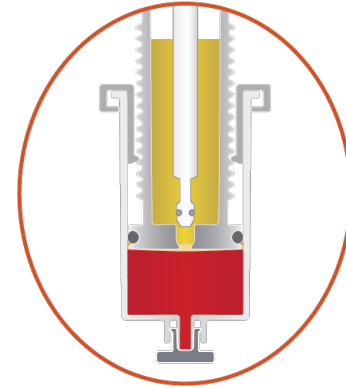
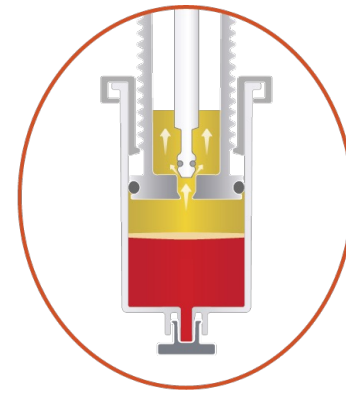


GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

SELECTION. SECURITY. SIMPLE. MAXIMUM CELL RECOVERY.

Dial-in technology for tailored approach. The desired PRP and hematocrit fraction passes directly from the main chamber to the inner chamber in a controlled, closed and simple way.





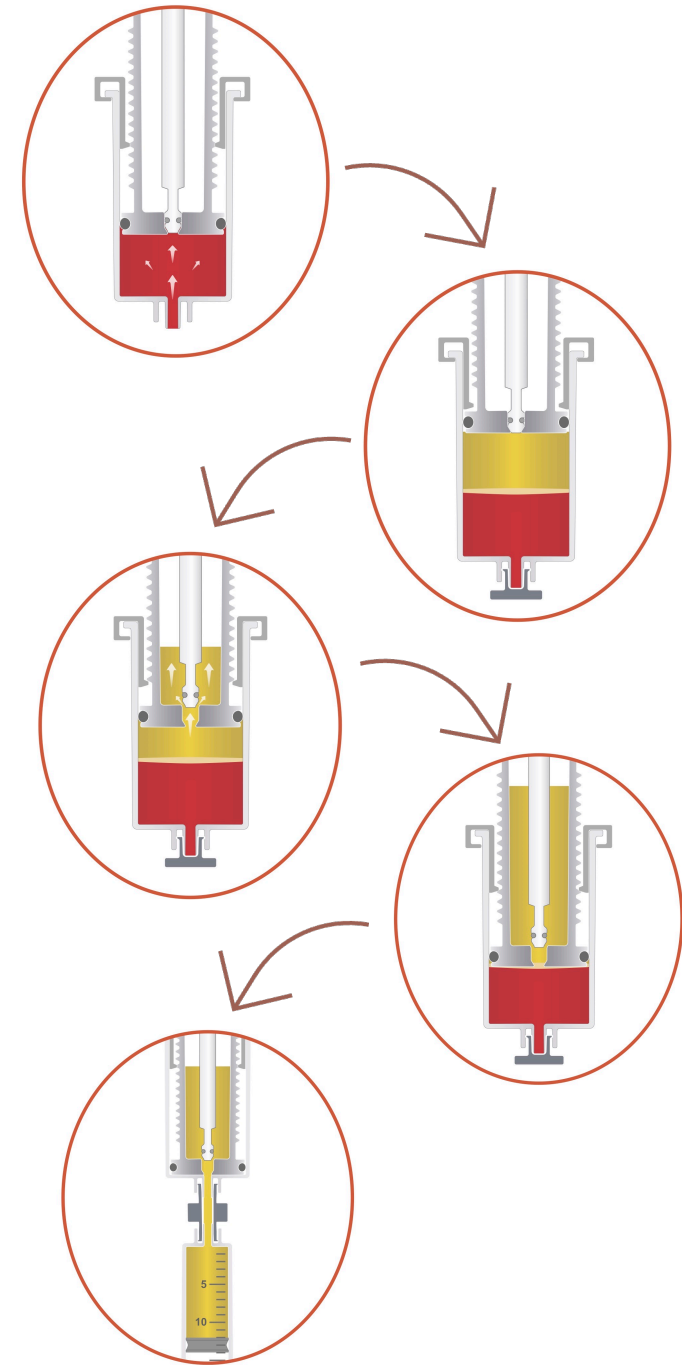
GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

ENGINEERED FOR PERFECTION
TAILORED FOR EVERY APPROACH

A customized system that allows the desired plasma and hematocrit fraction to be collected in a closed, simple and precise way, directly into the application syringe.

Operating similar to a standard syringe provides intuitive handling, with simple user training, allowing reproducibility of PRP quality that is tailored for any treatment approach.





GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

CUSTOMIZED CENTRIFUGE TECHNOLOGY:

Technology is based on key criteria:

- Minimum processing time (without compromising cellular function)
- OPTIMIZED centrifugation force (G force exerted on the cells maximizes cell recovery)
- Swinging bucket rotor (minimizes cell collision against surface of the tube)
- Triphasic cycle (enables the highest degree of separation, purity and stabilization of cell concentrate)





GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

SYSTEM ADVANTAGE



Most Efficient Processing Time - 2 Minute Single Spin
= 80% savings compared to competitors



High Platelet Capture – 95% Platelet Yield



High Purity – up to 99%



Leukocyte Poor or Rich – up to 4x



Multi-Functional Preparation



Closed-Loop System





**GENESIS
BIOLOGICS**

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

CONCENTRATION FACTOR: PLATELETS

<i>SAMPLE</i>	<i>Whole Blood Vol. IN (ml)</i>	<i>PRP Vol. OUT (ml)</i>	<i>Baseline Ct. (x10e6)</i>	<i>PRP Ct. (K/uL)</i>	<i>Fold Increase</i>	<i>% recovery</i>	<i>WBC (K/uL)</i>	<i>RBC (x10e6/uL)</i>	<i>HCT (%)</i>
211	25	12.0	179	352	1.97	94.4	3.1	0.20	1.7
221	25	12.0	179	360	2.01	96.5	3.0	0.19	1.6
231	25	12.0	179	339	1.89	90.9	3.1	0.19	1.6
241	25	12.0	179	365	2.04	97.9	3.1	0.21	1.7
251	25	12.0	179	346	1.93	92.8	2.9	0.19	1.6
262	25	12.0	209	420	2.01	96.5	6.5	0.68	6.0
272	25	12.0	209	401	1.92	92.1	3.7	0.48	4.2
282	25	12.0	209	432	2.07	99.2	9.0	0.83	7.3
293	25	12.0	221	450	2.04	97.7	2.8	0.33	2.9
2103	25	12.0	221	445	2.01	96.7	4.6	0.68	6.0
2113	25	12.0	221	378	1.71	82.1	3.6	0.47	4.2
Average				389.82	1.96	94.3	4.1	0.40	3.5
SD					0.10	4.8	1.9	0.24	2.1



**GENESIS
BIOLOGICS**

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

CONCENTRATION FACTOR: PLATELETS

<i>Donor #</i>	<i>Whole Blood Volume in (mL)</i>	<i>PRP Vol out (mL)</i>	<i>Baseline Ct. (x106)</i>	<i>PRP Ct. (K/μL)</i>	<i>Fold Increase</i>	<i>% Recovery</i>	<i>HCT %</i>	<i>WBC (k/μL)</i>
1	20	4.0	230	1107	4.81	96.26	15.1	18.2
2	20	4.2	326	1506	4.62	97.01	14.8	21.2
3	20	3.8	197	993	5.04	95.77	16.3	19.1
4	20	3.9	248	1183	4.77	93.02	13.6	17.8
Average:		4.0	250.3	1197.3	4.81	95.52	15.0	19.08



**GENESIS
BIOLOGICS**

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

PRP GROWTH FACTOR COMPOSITION

<i>PRP SYSTEM</i>	<i>VEGF (pg/mL)</i>	<i>PDGF (ng/mL)</i>	<i>FGF (pg/mL)</i>	<i>EGF (pg/mL)</i>	<i>TGFβ (pg/mL)</i>
AAPS Single Spin	132.7	602.2	5.7	242.6	1074.8
AAPS Double Spin	435.8	2100.5	17.8	256.9	1203.24
Comparator PRP	70.3	377.0	4.7	90.5	952.0



GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

Preparation 1 Single Spin PRP preparation

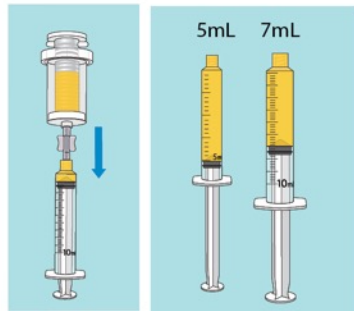
Settings

1500 RCF, 2 minutes



Output

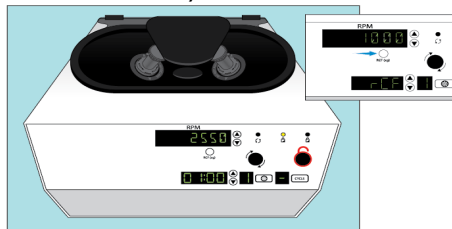
12mL (2x concentration)



Preparation 3 Platelet Rich Fibrin

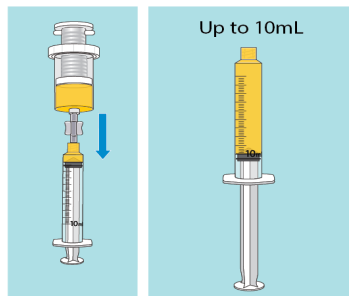
Settings

1000 RCF, 1 minute



Output

Up to 10mL (3.7x concentration)



PRP PREPARATION METHODS

Preparation 2 Double Spin PRP preparation

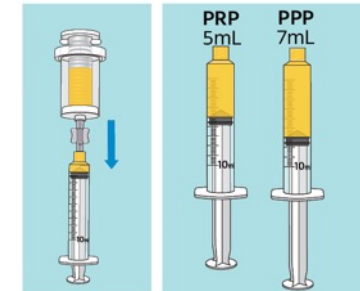
Settings

2000 RCF, 3 minutes



Output

5mL PRP (4-5x concentration)
7mL PPP



Preparation 4 Leukocyte Rich

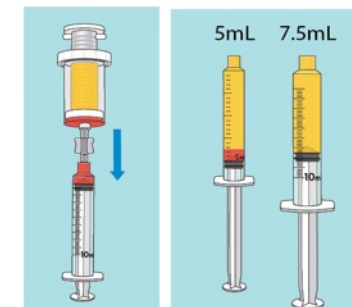
Settings

1500 RCF, 2 minutes



Output

12.5mL (2x concentration)

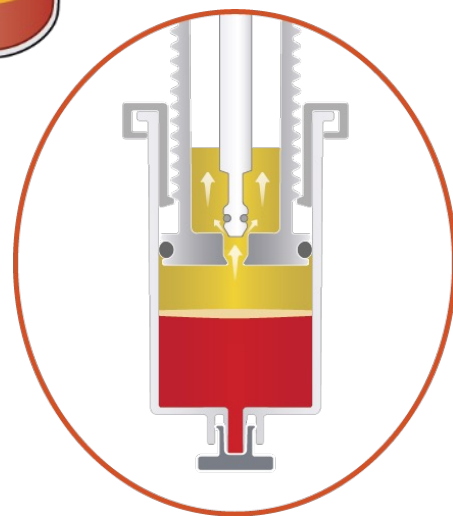
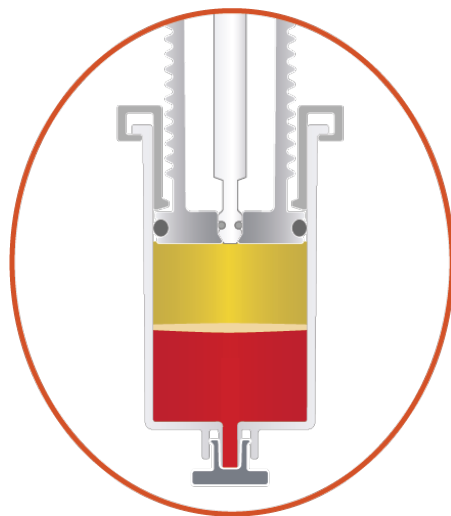
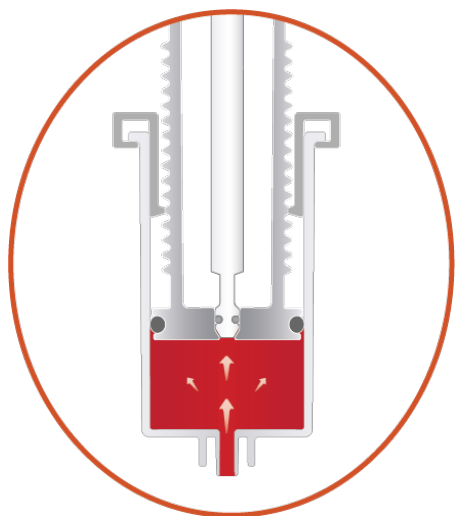
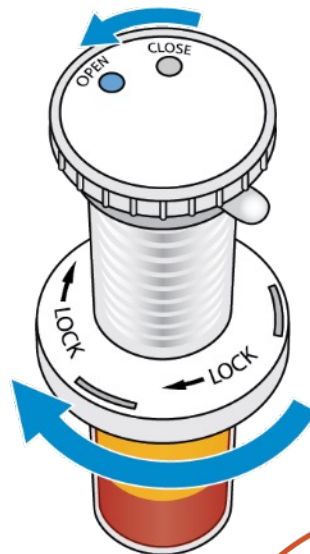
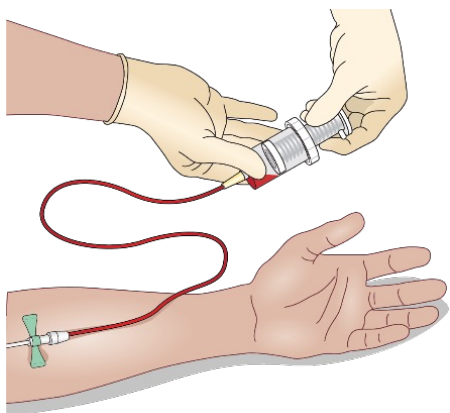




GENESIS BIOLOGICS

PRP PREPARATION

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)



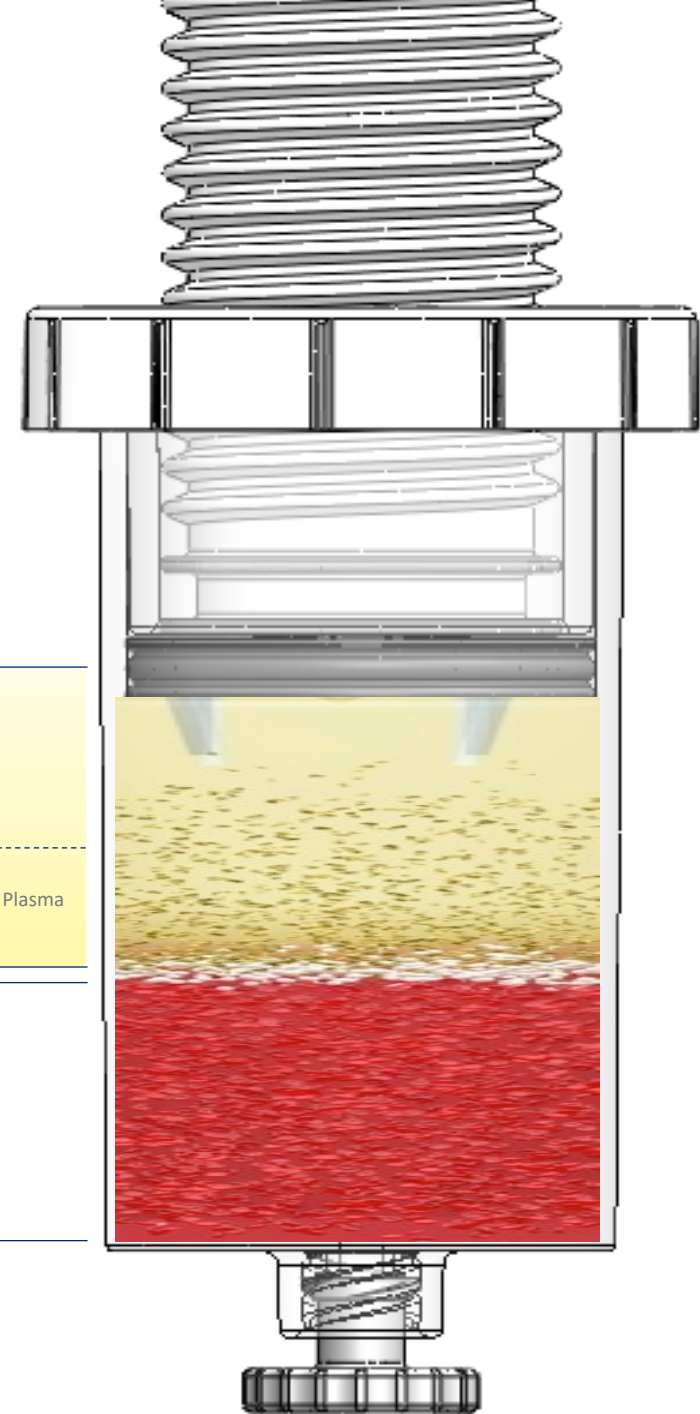


GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)



Plasmatic Fraction Total plasma with platelets and other bioactive signaling agents.	PPP Platelets-Poor Plasma 7mL
	PRP Platelets-Rich Plasma 5mL
	Buffy Coat Leukocytes
Red Fraction Red Blood Cells	





GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

SELECT THE PPP

Plasmatic Fraction

Total plasma with platelets and other bioactive signaling agents.

PPP

Platelets-Poor Plasma
7mL

PRP

Platelets-Rich Plasma
5mL

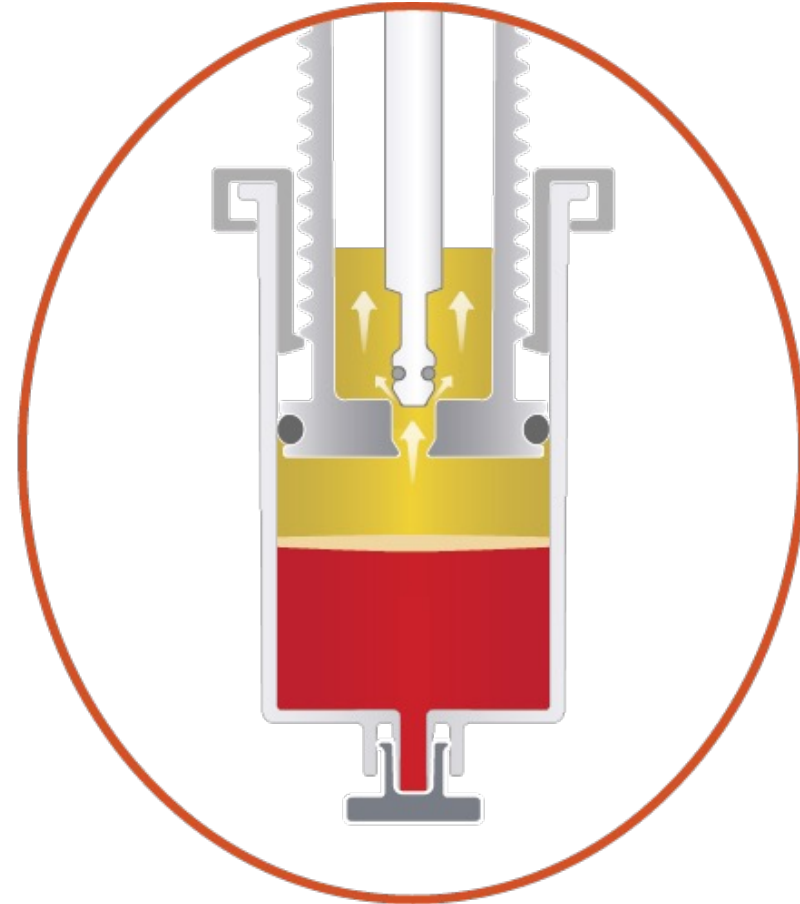
PRP
12ml

- [PLT]: > 389
- [WBC]: < 0.24
- [RBC]: < 0.40
- 95% PLT Yield

DOSE:

PLT: up to 450 (x10e6/uL)

WBC: up to 4.1 (x10e6/uL)





GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

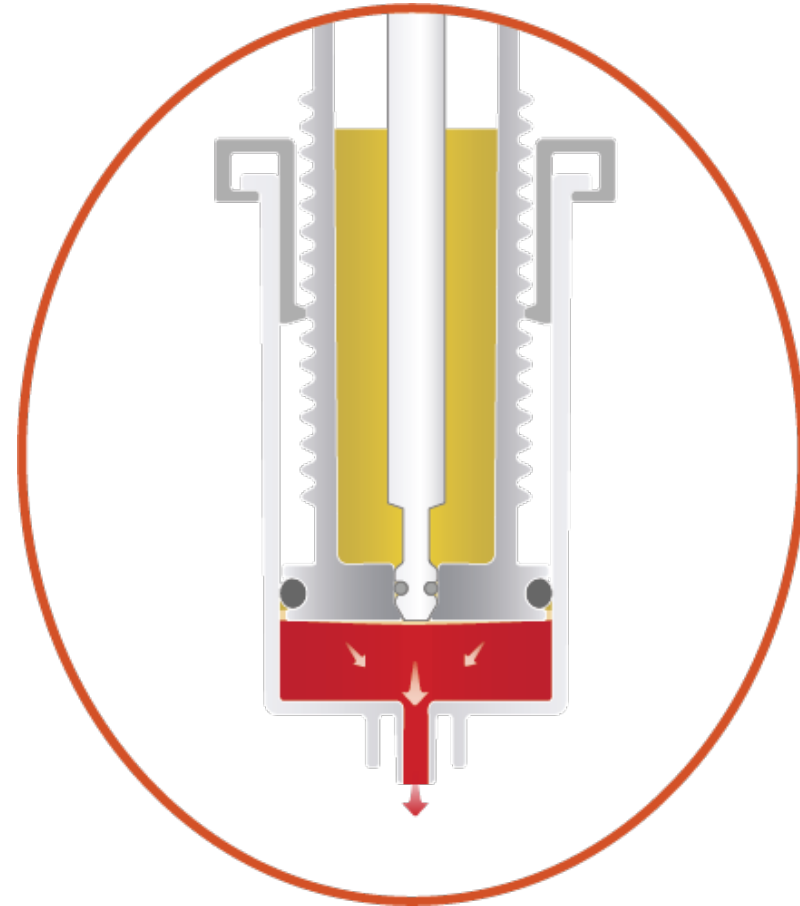
SELECT ALL

Plasmatic Fraction Total plasma with platelets and other bioactive signaling agents.	PPP Platelets-Poor Plasma 7mL
	PRP Platelets-Rich Plasma 5mL

PRP
12ml

- [PLT]: > 389
- [WBC]: < 0.24
- [RBC]: < 0.40
- **95% PLT Yield**

DOSE:
PLT: up to 450 (x10e6/uL)
WBC: up to 4.1 (x10e6/uL)





GENESIS BIOLOGICS

ADAPTIVE AUTOLOGOUS PROCESSING SYSTEM (AAPS)

SELECT THE PRP

Plasmatic Fraction

Total plasma with platelets and other bioactive signaling agents.

PPP

Platelets-Poor Plasma

PRP

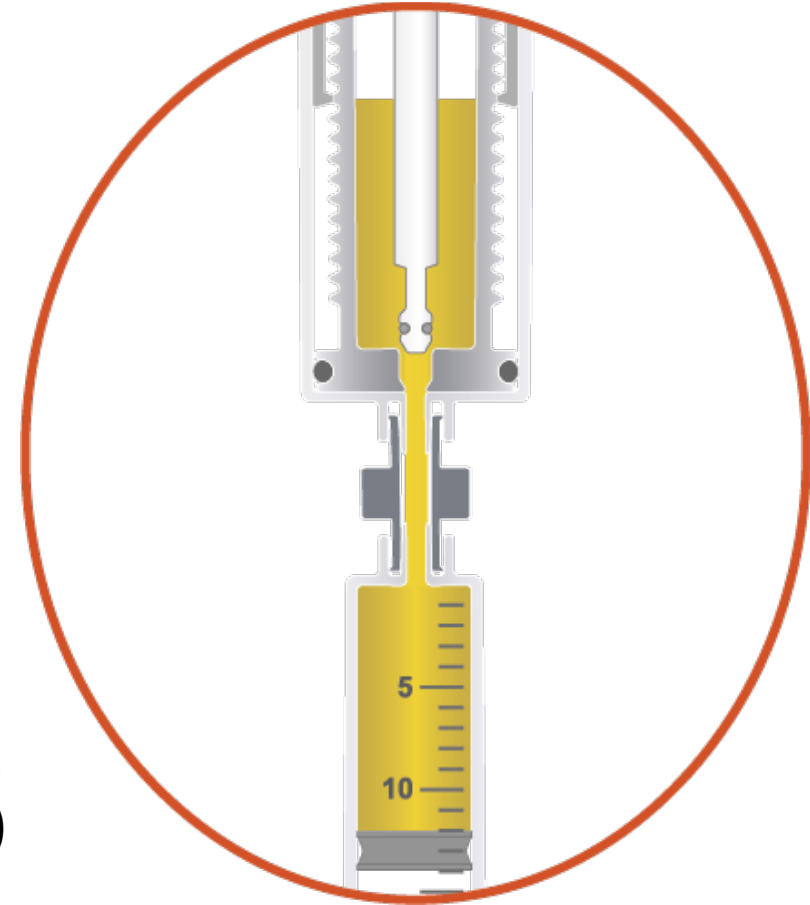
Platelets-Rich Plasma
12mL

PRP
12ml

- [PLT]: > 389
- [WBC]: < 0.24
- [RBC]: < 0.40
- 95% PLT Yield

DOSE:

PLT: up to 450 (x10e6/uL)
WBC: up to 4.1 (x10e6/uL)





GENESIS
BIOLOGICS

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

SELECT OPTIMUM PRP DOSE



Total dose average of
platelets in PRP:

4,680
million

Mean \pm standard deviation (100×10^6)
Data from the Characterization Study of Genesis AAPS.
VIAS LABS, Sanjay Batra, PhD, 2020-2021.



GENESIS BIOLOGICS

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

COMPARISON OF 2 PRP SYSTEMS



AC Blood ml	22.5	15
Total Plasma vol. ml (Max.)	12	6
Platelet Recovery Rate (total plasma)	up to 94.3 %	up to 57%
LP-PRP ml (Max.)	12	6
Increase Fold [Platelets] / ml	2	1,3
Dose PLT x 10 ⁶ µl (eg.200 x 10 ⁶ µl)	390	260

TOTAL DOSE:

4,680

1,560



GENESIS BIOLOGICS

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

PRP EFFECTS



Regenerative

Faster and better healing results



Angiogenic

Strong neovascularization
Better tissue quality



Anti-inflammatory

Less pain and swelling better post-op



Antibactericidal

Safe for injectable or topical applications





GENESIS
BIOLOGICS

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

PURE

Without WBC and RBC

REPRODUCIBLE

Consistent dose of platelets

EASY TO USE

Short learning curve

SAFE

Closed system

PRP CONCENTRATING SYSTEM





GENESIS
BIOLOGICS

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

Fully customizable Plasma

- PRP (12 ml) or TOTAL PLASMA (from 22.5 ml whole Blood)
- HIGH RECOVERY (>94%)
- TUNABLE HEMATOCRIT LEVELS - with or without leucocytes
- HIGH PURITY (>98% of erythrocytes and Leucocytes are eliminated from plasma)
- Optimal PRP CONCENTRATION: up to 4.8 x
- REPRODUCIBLE PLATELETS RECOVERY without activation
- 4 - DESIGNER PRP PROTOCOLS

IN CONCLUSION

The most versatile PRP on the market





GENESIS
BIOLOGICS

**ADAPTIVE AUTOLOGOUS
PROCESSING SYSTEM (AAPS)**

Fully customizable Plasma

- ✓ DIAL-IN TECHNOLOGY makes the difference
- ✓ Tunable/Tailored Approach
- ✓ Adaptable to SURGERY or In-Office
- ✓ Efficient processing time = 2 MINUTES
- ✓ EASY TO USE
- ✓ SAFE (closed system)

IN CONCLUSION

The most versatile PRP on the market

