

Our Products

Leukocytes (White Blood Cells)	2
Plasma	5
Platelets	7
Red Blood Cells	8
Whole Blood	10
Tubes only	11
Anticoagulants and Additive Solutions.....	12

Product Specifications Legend

HCT	Hematocrit
Lymph	Lymphocytes
Mono	Monocytes, eosinophils, basophils, and other large mononuclear cells such as blasts, metamyelocytes, myelocytes, etc.
Gran	Granulocytes, including Neutrophils, Eosinophils and Basophils

The following products are available for in-vivo or in-vitro use (except as noted):

Leukocytes (White Blood Cells)

Buffy coat from whole blood

White blood cell concentrate prepared from a single unit of whole blood by centrifugation. Product contains red blood cells and plasma, and negligible amount of anticoagulant (CPD or CPDA-1). Store at 20-24C up to 24 hours.

	Mean	Range	
		Min.	Max
Vol (mL)	30.5	23	38
WBC thsn/mm3	49.8	21	94
WBC (e9)	1.5	0.6	2.7
HCT %	36.8	15.2	65.7
% Gran	47.7	28.7	67.7
% Lymph	35.6	21.7	59.1
% Mono	10.4	4.9	18.7

Buffy Coat from the LRS Chamber

White blood cell concentrate of TrimaAccel® LRS chamber recovered after Plateletpheresis procedure. Product contains red blood cells, plasma and negligible amount of anticoagulant (ACD-A). Store at 20-24C up to 24 hours.

	Mean	Range	
		Min.	Max
Vol (mL)	7.5	7	8
WBC thsn/mm3	128.4	62.4	285.6

WBC (e9)	1.0	0.5	2.2
HCT %	2.3	1.9	2.5
% Gran	3	0.9	8.7
% Lymph	76.7	60.7	87.7
% Mono	19.7	9.1	32.4

Leukapheresis, collected by automated technology

Mononuclear cells collected from a single donor by a centrifugation apheresis technique. Cells are suspended in plasma with ACD-A anticoagulant added. Product is stored at room temperature (20 - 24C) for up to 24 hours.

	Median	Range	
		minimum	maximum
WBC thsn/mm3	77.6	50.4	127.7
HCT %	5.8	2.2	11.8
Vol (mL)	132	100	184
Total WBC (e9)	10.2	5.0	23.5
% Lymph	73.2	37.4	78.9
% Mono	15.2	12.2	20.2
% Gran	12.3	8.5	46.5
Lymph thsn/mm3	53.0	36.7	69.0
Total Lymph (e9)	7.0	3.7	12.7
Mono thsn/mm3	11.3	6.5	25.8
Total Mono (e9)	1.5	0.7	4.7

Gran thsn/mm3	7.7	5.2	53.7
Total Gran (e9)	1.0	0.5	9.9

Isolated Primary Cells

Please call or email us for current availability and more information. 650-724-2997, sbc-clients@stanford.edu

Plasma

Frozen plasma (FP)

Plasma separated from whole blood by centrifugation (200 mL product, anticoagulant CPD or CPDA-1) or collected by a centrifugation apheresis technique (400 mL product, anticoagulant ACD-A). Frozen at -18C within 8 hours of collection (6 hours for ACD-A plasma), FFP contains plasma proteins including all coagulation factors.

Volume	~ 200 or 400 mL
Fibrinogen	2-4 mg/mL
Coagulation Factors	1 IU/mL
Storage, frozen	< -18C, 12 months
Storage, thawed	1-6C, 24 hours

Recovered plasma, frozen

Plasma separated from whole blood by centrifugation and frozen at -18C between 8 and 24 hours of whole blood collection. Contains Factor VIII:C as well as other labile and stable coagulation factors, anticoagulant CPD or CPDA-1.

Volume	~200 mL
Factor VIII:C	~150 IU
Storage, frozen	< -18C, 12 months
Storage, thawed	1-6C, 24 hours

Plasma, liquid

Fluid portion of whole blood separated by centrifugation from whole blood unit (200 mL product, anticoagulant CPD or CPDA-1) or by apheresis (400 mL product, anticoagulant ACD-A). Contains plasma proteins including stable coagulation factors.

Volume	200 or 400 mL
Fibrinogen	~2-4 mg/mL
Stable coagulation factors only*	1 IU/mL
Storage	1-6C, 24 hours

Cryoreduced plasma products

Plasma remaining after removal of cryoprecipitated AHF. Significantly reduced clotting factors and fibrinogen.

Platelets

Platelets, collected by automated technology

Platelets collected from a single donor by a centrifugation apheresis technique. Each product contains platelets suspended in plasma and anticoagulant ACD-A.

Volume	200-300 mL
Platelets	> 3.0 x 10 ¹¹
Storage	20-24C, continuous gentle agitation, 5 days

Platelets with concurrent plasma, collected by automated technology

Plasma up to 200 mL collected from a single donor concurrently with an apheresis platelet collection. See Fresh Frozen Plasma and Plasma, liquid.

Leukoreduced platelets, pheresis

Unless specified, platelets, pheresis undergo white blood cell reduction during the automated collection process, resulting in residual WBC < 5.0 x 10⁶.

Red Blood Cells

Additive Red Blood Cells

Additive red blood cells may be prepared by centrifuging whole blood to remove as much plasma as possible, and replacing the plasma with Adsol (see *Legend*). Cells have lower viscosity than CPD or CPDA-1 Red blood Cells, and flow in a manner more comparable to that of whole blood.

AS-1 (WB)

Volume (RBC+Plasma)	~300 mL
HCT	55-65%
Storage	1 - 6C, 42 days

AS-1 (Aph Double Red Cells)

Volume	~413-490 mL
Absolute RBC volume	360-420 mL
Storage	1 - 6C, 42 days

CPD or CPDA-1 Red Blood Cells

Prepared from whole blood collected into CPD or CPDA-1 anticoagulant-preservative (see *Legend*), and separated from the plasma by centrifugation or sedimentation.

Volume	~230 mL
HCT	65-80%
Storage, CPD	1 - 6C, 21 days
Storage, CPDA-1	1-6C, 35 days

Red Blood Cells, Leukoreduced

Prepared by filtering red blood cells with Fenwal CPDA-1 or Fenwal CPD/ADSOL Leukocyte Filters. Filtering may be done within 3 days of draw. Residual leukocytes in filtered red blood cells are $<5 \times 10^6$ with retention of 85% of the original component.

Red blood cells, dry packed

Red blood cells, or leukoreduced red blood cells derived from 475 mL of whole blood, further centrifuged to achieve final HCT of $>85\%$. Not available in AS-1 anticoagulant-preservative.

Whole Blood

Fresh whole blood 475mL (CPD or CPDA, anti-coagulant)

Salvage whole blood over 350 grams, untested or tested, or recruited donor released within 24 hours of collection.

Volume	500 mL ($\pm 10\%$)
HCT	> 34%
Storage, CPD	1 - 6C, 21 days
Storage, CPDA-1	1-6C, 35 days

Tubes only

Red top (clot), 6mL

There is no additive or anticoagulant added to this tube.
Used for specific procedures requiring serum.

Purple (lavender) top (K2 EDTA, spray-coated plastic), 6 mL

Contains 0.07 mL of 15% buffered solution or the calculated equivalent of 10.5 mg EDTA (K 3). EDTA or ethylenediaminetetraacetic acid chelates calcium to prevent clotting.

Used primarily for hematology and specific chemistry procedures requiring plasma or whole blood. EDTA whole blood samples are superior for flow cytometry studies because the formation of artifacts is prevented, even after prolonged standing.

Purple (lavender) top (K2 EDTA, spray-coated plastic), 4 mL

Contains 0.050 mL of 15% buffered solution or the calculated equivalent of 7.5 mg EDTA (K 3). EDTA or ethylenediaminetetraacetic acid chelates calcium to prevent clotting.

Used primarily for hematology and specific chemistry procedures requiring plasma or whole blood. EDTA whole blood samples are superior for flow cytometry studies because the formation of artifacts is prevented, even after prolonged standing.

Yellow top (ACDA-liquid), 8.5 mL

Contains 1.50 mL of anticoagulant Acid Citrate Dextrose Solution (A). ACD-A contains nutrients to help maintain the whole blood for several weeks.

Used primarily for specific immunohematology and histocompatibility procedures requiring preservation of whole blood.

Green top (Heparin), 10 mL

Contains 143 USP Units of Sodium Heparin. Heparin inhibits thrombin to prevent clotting.

Used for chemistry and selective hematology determinations. This anticoagulant is best for prevention of hemolysis and for osmotic fragility tests.

Anticoagulants and Additive Solutions

ACD-A Anticoagulant Citrate Dextrose solution USP (ACD) Formula A

- Dextrose (monohydrate)
- Sodium Citrate (dihydrate)
- Citric Acid (anhydrous)

AS-3 Additive Solution Formula 3 (100mL added to ACD-A Red Blood Cells collected by apheresis)

Each 100 mL contains:

- Dextrose (monohydrate), USP 1.10 g
- Sodium Citrate (dihydrate), USP 0.588 g
- Sodium Chloride, USP 0.410 g
- Monobasic Sodium Phosphate (monohydrate), USP 0.276 g
- Citric Acid (monohydrate), USP 0.042 g
- Adenine 0.030 g

CPD Anticoagulant Citrate Phosphate Dextrose USP

- Sodium Citrate (dihydrate) 26.3 g/L
- Dextrose (monohydrate) 25.5 g/L
- Citric Acid (anhydrous) 3.27 g/L
- Monobasic Sodium Phosphate (monohydrate) 2.22 g/L

AS-1 Adsol® additive formula (added to CPD Red Blood Cells)

- Sodium Citrate (dihydrate) 26.3 g/L
- Dextrose (monohydrate) 25.5 g/L
- Citric Acid (anhydrous) 3.27 g/L
- Monobasic Sodium Phosphate (monohydrate) 2.22 g/L
- Sodium Chloride
- Mannitol
- Adenine

CPDA-1 Anticoagulant Citrate Phosphate Dextrose Adenine Solution USP

- Dextrose (monohydrate) 31.9 g/L
- Sodium Citrate (dihydrate) 26.3 g/L
- Citric Acid (anhydrous) 3.27 g/L
- Monobasic Sodium Phosphate (monohydrate) 2.22 g/L
- Adenine 0.275 g/L

(In order of Research Products and Services tables)