WHOLE BLOOD

Whole blood can be broken down into four major components: plasma, white blood cells, red blood cells, and platelets. Those components can be broken down further into minor fractions.

**MAJOR COMPONENTS**

- **Plasma**
- **White Blood Cells**
- **Red Blood Cells**
- **Platelets**

**MINOR FRACTIONS**

- **Plasma Fractions**
  - Albumin
  - Clotting Factors
  - Immunoglobulins

- **White Blood Cells**
  - Interferons
  - Interleukins

- **Red Blood Cells**
  - Hemoglobin
  - Hemin

- **Platelets**
  - None Currently Available

**PRODUCTS THAT CONTAIN PLASMA FRACTIONS:**

- Erythropoietin
- Streptokinase
- Colony Stimulating Factors
- Synthetic Interleukins
- Synthetic Interferons
- Cryoprecipitate
- Prothrombin Complex Concentrate (PCC)
- Tissue Adhesives/sealants
- Platelet Gel (made with own platelets)

**PRODUCTS THAT CONTAIN RED BLOOD CELL FRACTIONS:**

- Hemoglobin-Based Oxygen Carriers (not widely available)
- Normosang
- Panhematin

*Talk with your doctor about the potential risks and possible side effects of minor fractions, as well as what your other options may be.*
Plasma Fractions

Albumin
Albumin is a protein made in the liver that flows through the body in plasma, which is the colorless fluid part of blood. Albumin helps keep blood volume in a normal range. It can be separated from plasma and used as a treatment to increase volume before or after surgery if needed. Products that may contain albumin: erythropoietin, streptokinase, colony stimulating factors and interleukins.

Clotting Factors
Clotting factors are a group of proteins that flow in blood plasma. They can be separated from plasma and used to help stop bleeding in patients who bleed easily. Products that contain clotting factors: cryoprecipitate (contains fibrinogen, von Willebrand factor, factor VIII, factor XIII), prothrombin complex concentrate (PCC).

Immunoglobulins (or Immune Globulins)
Immunoglobulins are a special group of proteins found in blood plasma. Also called antibodies, they are separated from pooled plasma and used in medicine that helps fight viruses and bacteria. Example: RhoGam.

White Blood Cell Fractions

Interferons
Interferons are proteins made by white blood cells to fight infection. As medicine, interferons are often synthetic (man-made) and may contain a small amount of albumin, which is a plasma fraction.

Interleukins
Interleukins are proteins made by white blood cells to help cells communicate with each other. As medicine, interleukins are often synthetic (man-made) and may contain a small amount of albumin, which is a plasma fraction.

Red Blood Cell Fractions

Hemoglobin
Hemoglobin is a protein in red blood cells that carries oxygen. Hemoglobin can be separated from red blood cells to make Hemoglobin-Based Oxygen Carriers (HBOCs), which are blood substitutes. HBOCs are not currently widely available.

Hemin
Hemin is a salt that blocks the production of substances called porphyrins. Hemin can be separated from red blood cells and used to treat a condition called Porphyria.

Platelet Fractions

None Currently Available

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