The specially-designed Tropocells Separator Gel produces an optimum PRP profile:

- **Unique Biological Profile**
  - May be combined with other treatments to stimulate
  - PRP accelerates healing and may delay or eliminate
  - Minimal safety concerns – PRP is a very safe procedure; it is non-allergenic and
  - Approved medical device by the European (CE) and USA (FDA) Regulatory Authorities (FDA clearance for orthopedic applications only).
  - Closed, biocompatible and protein-free system minimizing safety concerns.

- **Advantages of PRP Therapy in Orthopedics & Sports Medicine**
  - Platelet-rich plasma is a review of biology and applications in plastic surgery.
  - Pakistan J. J Med Case Rep. 2011
  - Regeneration of human bones in hip osteonecrosis and defects.
  - Platelet-rich plasma in arthroscopic rotator cuff repair: a prospective randomized controlled trial.
  - Platelet rich plasma in arthroscopic rotator cuff repair: a prospective randomized clinical trial.
  - Role of platelet-rich plasma in combination with allogeneic bone substitute in regeneration of osseous defects.
  - Filardo G et al. BMC Musculoskelet Disord. 2012
  - Positive effect of an autologous platelet concentrate in on demineralized bone matrix osteoinductivity.
  - The effect of thrombin activation of platelet-rich plasma on demineralized bone matrix osteoinductivity.
  - De La Mata. Reumatol Clin. 2013
  - Platelet-rich plasma: a review of biology and applications in plastic surgery.
  - Platelet-rich plasma in striae distensae: a pilot study.
  - Growth Factor and Cytokine Concentrations Are Influenced by the Cellular Composition of Platelet-Rich Plasma.
  - Amgar G et al. Prime 2011
  - Using objective criteria to evaluate cosmetic effects of platelet rich plasma.
  - Platelet-rich plasma on alopecia areata.
  - controlled, half-head study to evaluate the effects of platelet rich plasma on scalp areata.
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**What is Platelet-Rich Plasma?**

Platelet-Rich Plasma (PRP) is an innovative and promising approach in tissue regeneration. PRP is defined as an autologous, rich-concentration preparation of plasma in a small volume of plasma [1]. PRP owes its therapeutic potential to the cellular and biochemical properties of platelets, which possess multiple regenerative properties. The autologous nature of Tropocells® PRP guarantees its excellent safety profile [2].

**Therapeutic Effect of PRP**

PRP is thought to promote physiological healing and rapid soft and hard tissue regeneration by delivering high concentrations of growth factors essential for connective tissue healing, regeneration and repopulation, tendon, cartilage and ligament, promoting development of new blood vessels and stimulating wound healing.

**PRP Growth Factors**

Upon activation in platelets release growth factors, cytokines and other bioactive proteins which are part of the natural healing process. These growth factors are responsible for stimulating mitogenesis, such as Platelet-Derived Growth Factor (PDGF), Transforming Growth Factor (TGF), Epidermal Growth Factor (EGF), Vascular Endothelial Growth Factor (VEGF), Fibroblast Growth Factor (FGF) and others. These growth factors control and regulate the healing cascade, by exerting their effects on inflammatory process, cell proliferation, migration, vascularity, wound healing, collagen production and other tissue remodeling processes [1-2].

**Platelet Activation**

Platelets may be activated via addition of activating substances, such as thrombin and calcium chloride. However, it has been postulated that in vivo activation of platelets caused by injection, upon contact with connective tissue or exposure to in vivo coagulation factors, such as collagen, the cell membranes of the platelet is “activated” to release their contents granules, resulting in a slow release pattern of growth factors secretion, which is beneficial for stimulating a continuous healing response [3].

**PRP Applications**

PRP’s safety and effectiveness have been established for accelerating soft-and hard tissue healing in treatment of tendinopathies [4-9], osteoarthritis [7] and various joint and musculoskeletal pathologies in Orthopaedics and Sports Medicine [6, 9]. PRP may be used as a treatments or as a biological adjuvant to other treatments, such as bone substitutes [10], hyaluronic acid, collagen and stem cells [11]. Monoclonal PRP has been used successfully for healing chronic wounds [10-12, 14] in Plastic [1-13], Oral and Maxillofacial surgery [10], Skin Rejuvenation [10,18] and Hair Restoration [17,18,19].

* *Publications with Estar Medical’s device for PRP preparation.*