ELIXHEAL
SKINCARE



The New Technology for Safe Platelet Activation



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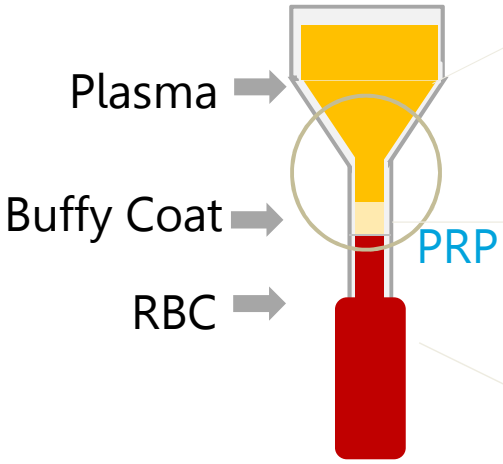
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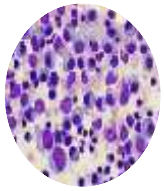
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Blood Composition



Blood Composition		
Plasma 	91% Water 7% Blood Proteins 2% Nutrients Hormones Electrolytes	55%
Buffy Coat 	Platelets White Blood Cells	<1%
RBC 	Red Blood Cells	45%

What is PRP?

PRP is just like a concentrated juice of a lot of healthy growth factors.



Buffy Coat

Buffy Coat contains platelets and most of the white blood cells, making up less than 1% of the total volume of the whole blood.

Plasma	Plasma is composed of about 90% water, 9% organic matter, and 1% mineral. It makes up about 55% of total blood volume.
Platelets	Platelets release a multitude of growth factors that play a significant role in the repair and regeneration of connective tissues.
PRP (Plasma-Rich-Platelet)	PRP(platelet-rich plasma) is blood plasma that has been enriched with platelets. In a word, PRP is a concentrated source of autologous platelets containing ample growth factors and other cytokines that stimulate healing of bone and soft tissue.

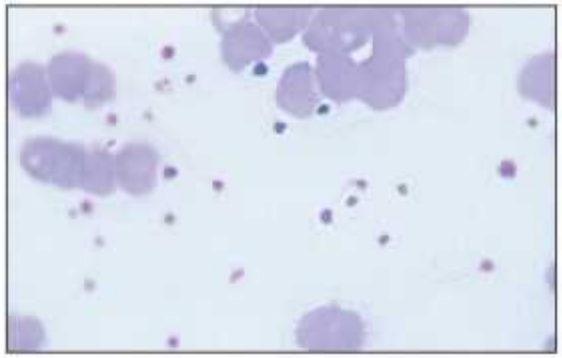
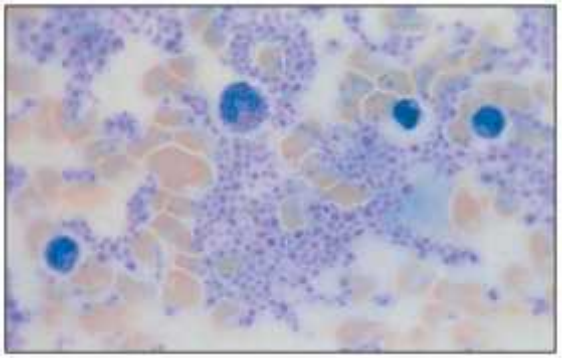
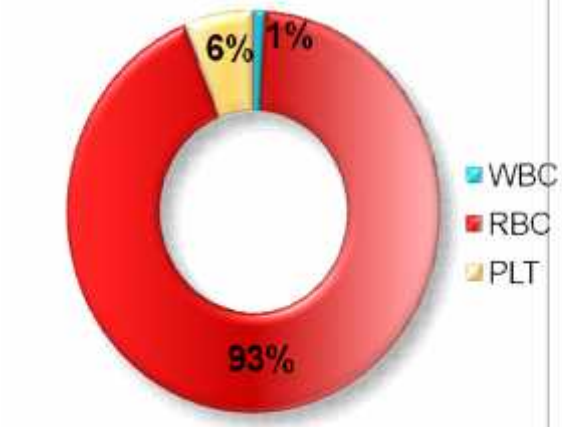
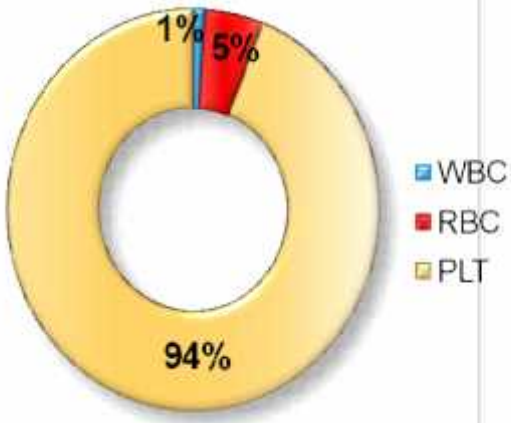
Growth Factors Present in PRP

Growth Factors in PRP

PRP includes lots of essential growth factors (EGF, VEGF, PDGF, TGF-β, FGF) that accelerate the cell regeneration and the wound healing process.



Growth Factors Present in PRP

PLT counts in normal blood	PLT counts in PRP
about 200,000/μl	about 1,000,000/μl
 Peripheral blood smear in normal blood	 Peripheral blood smear in platelet rich plasma
 Cell Ratios in a normal blood clot	 Cell Ratios in platelet rich plasma

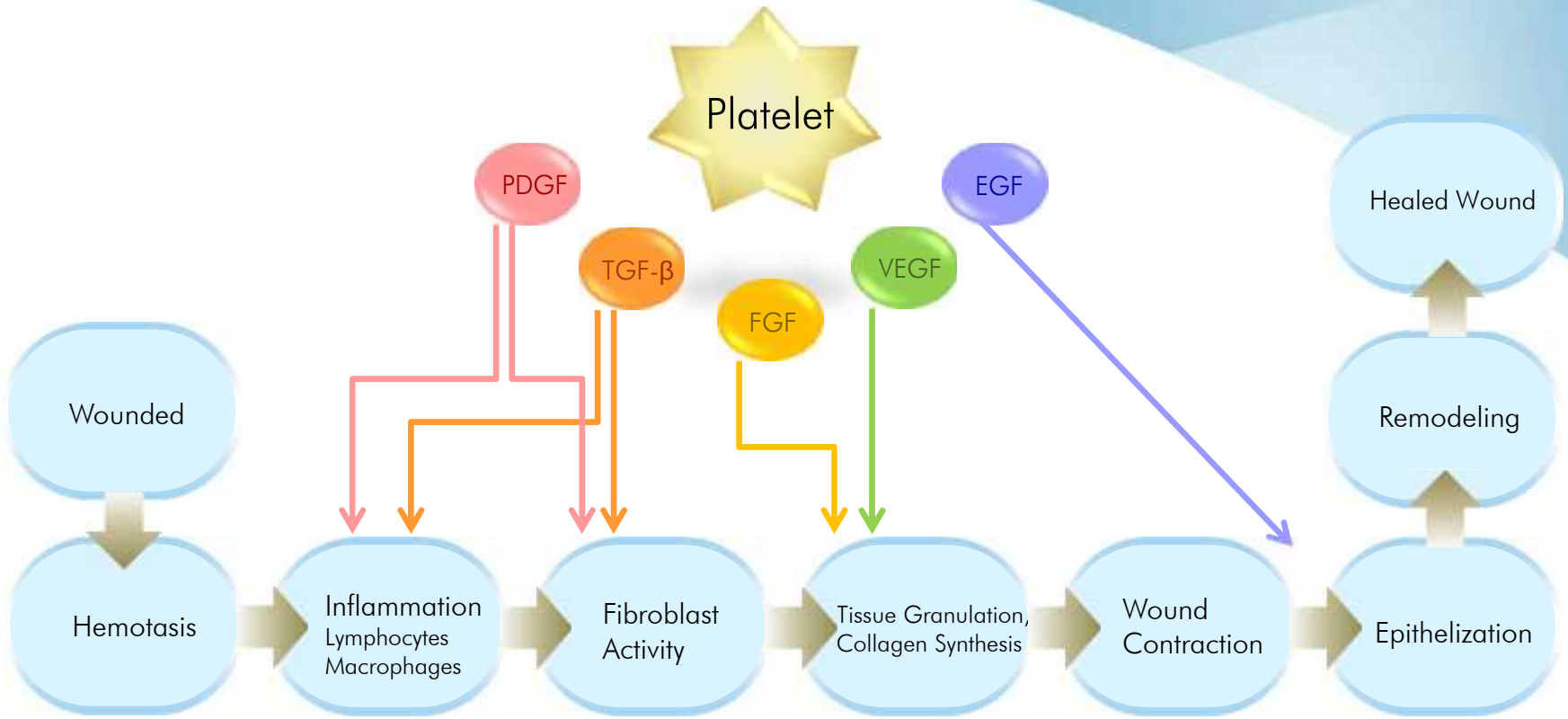


What is PRP Definition?

- Normal Platelet counts in blood is average about **200,000/μl.**
- The scientific proof of bone and soft tissue healing enhancement has been shown using PRP with **1,000,000/μl** is the working definition of PRP today
- Lesser concentrations cannot be relied upon to enhance wound healing.

*The source : Platelet-Rich Plasma (PRP): What is PRP and What Is Not PRP? – Robert E. Marx, DDS;2001.

Growth Factors Present in PRP



Millions of growth factors in PRP activate the skin regeneration and help destroyed and aging cells restored or newly created, stimulating collagen and elastin under the skin. As a result, it will naturally rejuvenate the skin and subcutaneous tissue.

Why is PRP concentration significant?

GF plus

PLEASE DON'T CONFUSE PRP WITH PPP

PRP (Platelet Rich Plasma)

Blood plasma that has been enriched with platelets

PPP (Platelet Poor Plasma)

Blood plasma with very low number of platelets

The more PPP you include in PRP, the more mixture (alleged PRP) you may gain. However, it cannot be considered as PRP and has no effect for a treatment because its platelet density is low.

Platelet "Rich" Plasma must contain more than 1,000,000/μl platelet count

Why is PRP concentration significant?

General Kit made by hospital's own

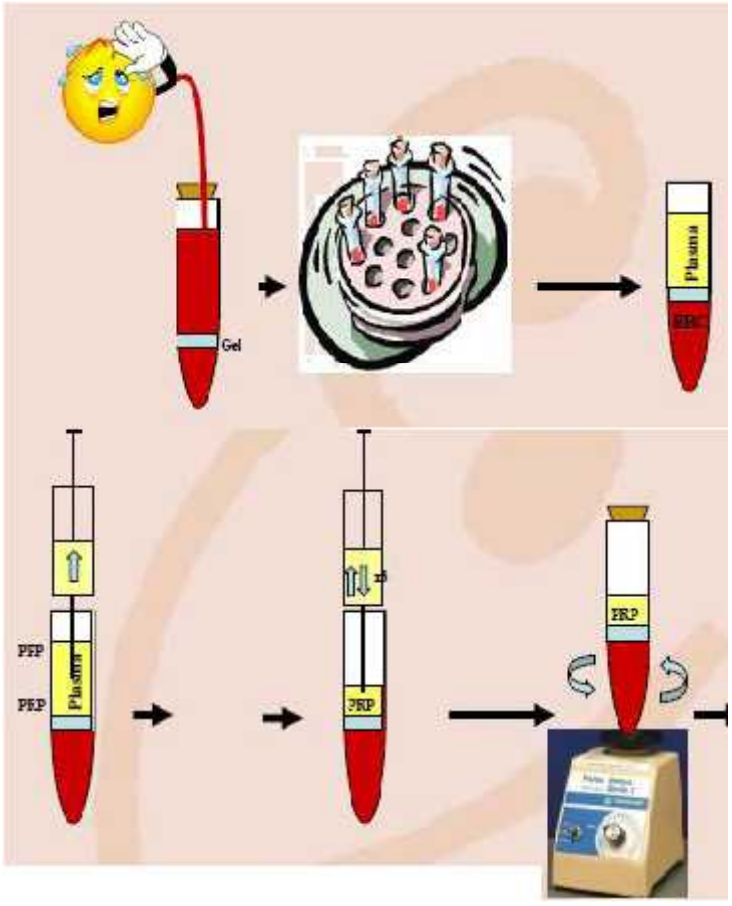
Number of Platelet
About 190,000/ul



Very POOR!

Why is PRP concentration significant?

ATTENTION: NOT ALL PRP ARE THE SAME!



Very POOR



Number of Platelet
About 700,000/ul

Why is PRP concentration significant?

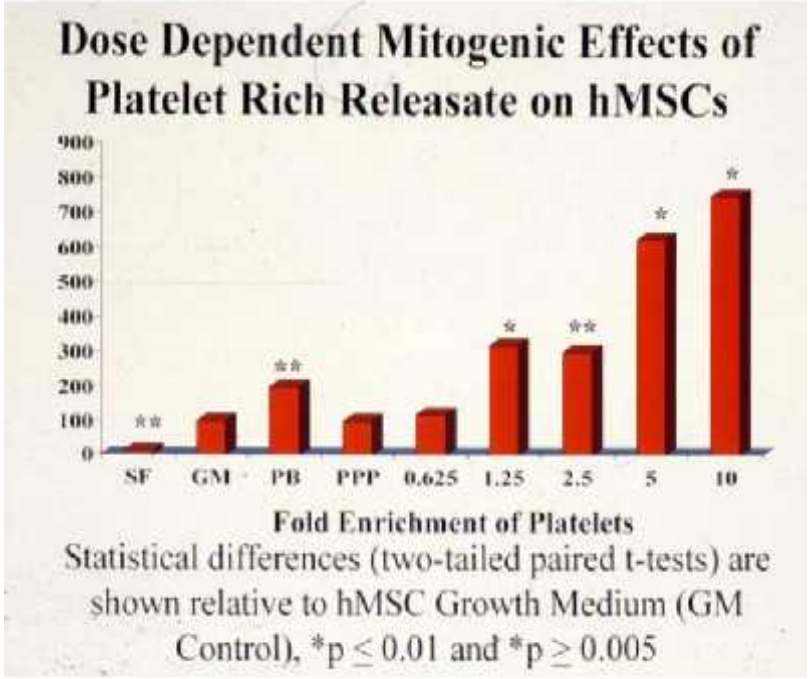


FIGURE 1. Proliferation of human mesenchymal stem cells (hMSCs) is proportional to platelet concentrations in PRP. (SF, fetal calf serum; GM, growth medium; PB, phosphate buffer; PPP, platelet poor plasma.)

01 The proliferation of adult mesenchymal stem cells and their differentiation were directly related to the platelet concentration.

02 A sufficient cellular response to platelet concentrations first began when a 4- to 5-fold increase over baseline platelet numbers.

The source : Platelet-Rich Plasma: Evidence to Support Its Use / Robert E. Marx, DDS

Why is PRP concentration significant?

GF plus

Platelet Count is the Key for Effectiveness

Before Separation			
WBC	4.6		$10^3/mm^3$
RBC	4.67		$10^4/mm^3$
HGB	14.0		g/dl
HCT	41.1		%
MCV	88		μm^3
MCH	29.9	h	pg
MCHC	34.0		g/dl
RDW	13.3		%
PLT	182		$10^3/mm^3$
MPV	8.2		μm^3
PCT	0.149		%
PDW	13.8		%

PLT count before concentration
182,000/㎕

After Separation			
WBC	14.6	!H	$10^3/mm^3$
RBC	0.13	L	$10^4/mm^3$
HGB	0.6	L	g/dl
HCT	0.8	#L	%
MCV	60	#L	μm^3
MCH	0.0	L	pg
MCHC	0.0	#L	g/dl
RDW	6.5	L	%
PLT	1604	H	$10^3/mm^3$
MPV	8.2		μm^3
PCT	1.314	H	%
PDW	14.3		%

PLT count after activation
1,604,000/㎕

≒ 9×

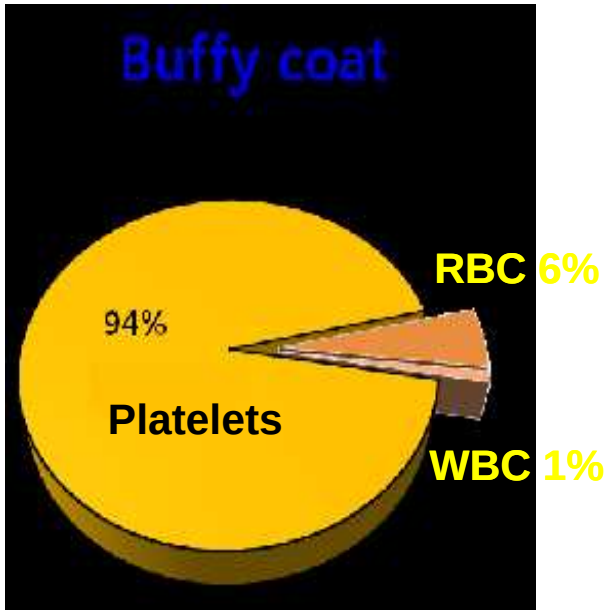
capable of generating **7~9 times** concentrated PRP
(having 1,200,000~2,000,000/㎕ PLT count).

※ For an effective treatment, the platelet count must be 4X or greater than baseline.

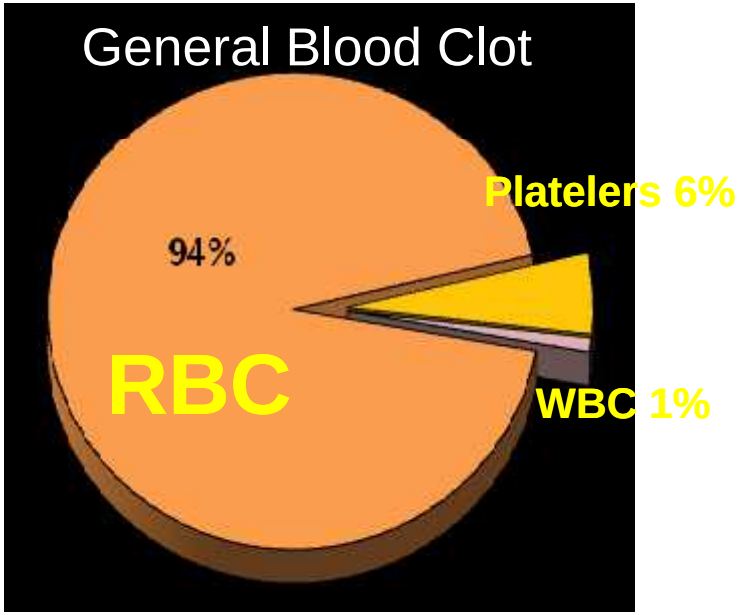
Why is PRP concentration significant?

VS

Good PRP



General Blood Clot

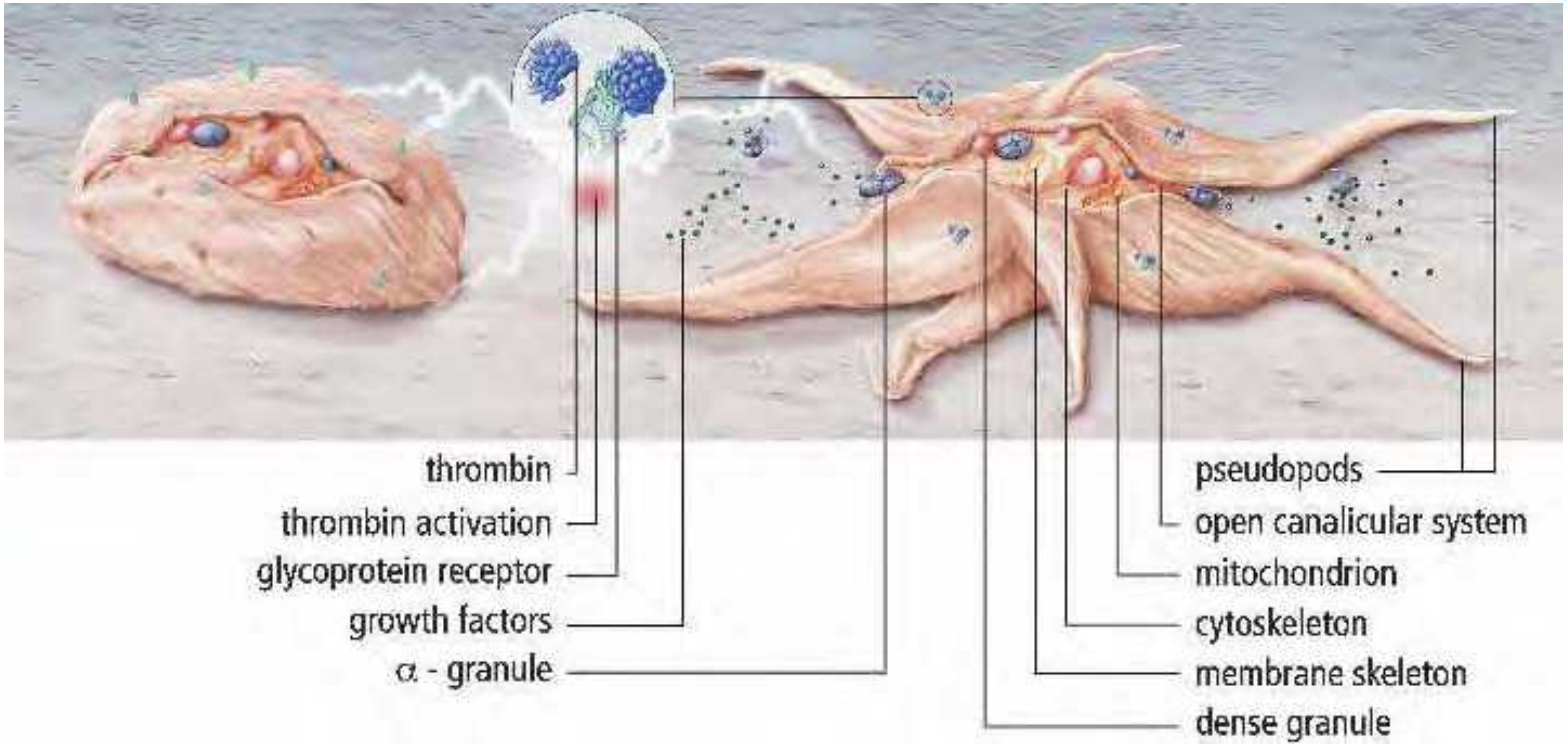


How are Platelets Activated ?



How are Platelets Activated ?





Advantages of GFplus



Conception

- **Based on the idea of how Platelets become activated through narrow blood vessels in fast bloodstream.**

Special Features

- No Chemicals Included! Uses Capillary Stress (physical method) only to activate Platelets
  → **100% full autologous therapy! No Side effects!**
- Quantitative increase of Growth Factors:
  → **Maximizes the PRP Therapy effects**

Advantages of GFplus

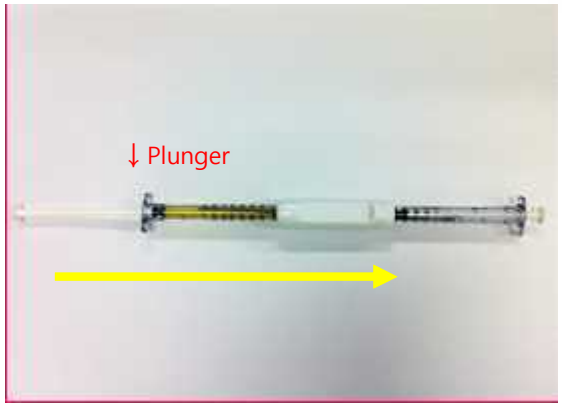
Activation Factor	Chemical agonist	Physical stress
Type	Calcium Chloride, Thrombin, ADP, Collagen, Peptide, etc.	**Capillary stress**
Advantages	Can activate platelets by simply adding agonists	- Safety - Overcame adverse effects of chemical substances
Drawbacks	- Calcium has no effects when injected in cartilage as it gets neutralized, and it could cause skin rashes, redness, and pain when injected in subcutaneous fat - Thrombin and Collagen are substances that apply directly to form thrombus, so they could act as potential risk factors if not perfectly separated before injection - Impossible clinical application in some countries	**No commercialized product in the market**

Developed "GF+" using Capillary Stress

GF+ Manual



① Connect two luer-lok syringes (one empty and one with PRP) to *GF+* simply by screwing the syringes to the right.



② Hold the end of each syringes with both hands, and push the plunger back and forth so that PRP can go through the *GF+*.



③ Repeat this for 25 times.



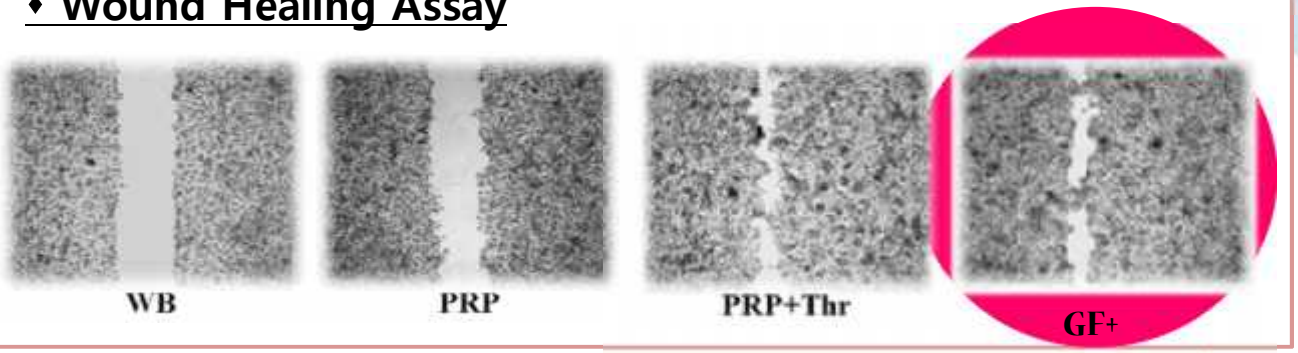
④ PRP activation is finished.

** The size of syringes here can vary according to the treatment plan as long as they are luer-lock syringes.

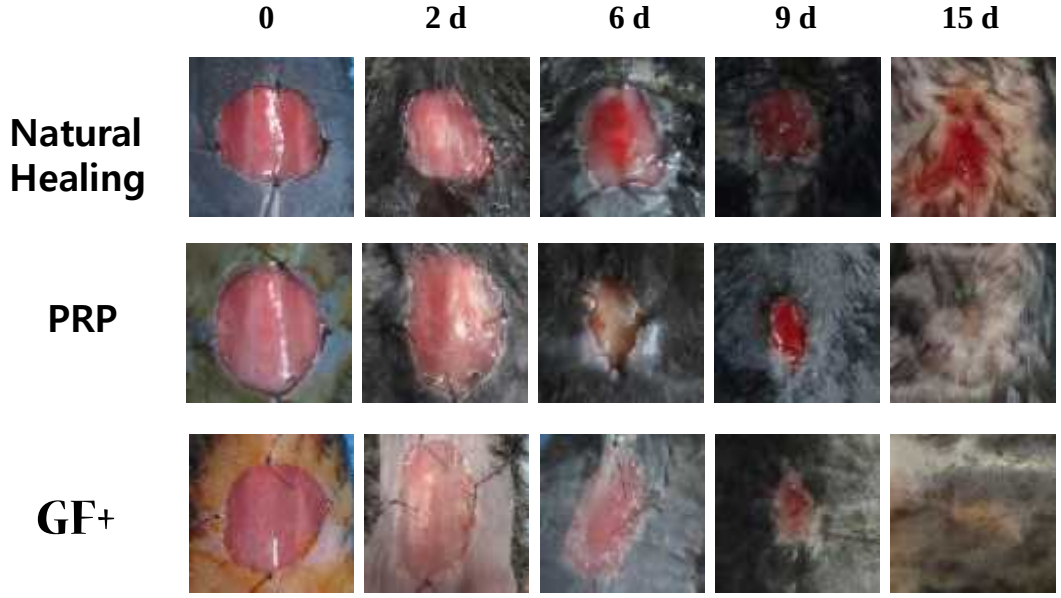
Validation Evaluation

GF plus®

♦ Wound Healing Assay



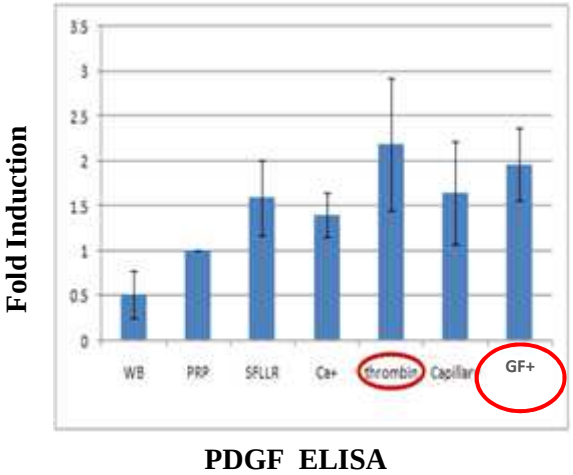
♦ In-vo Validation Evaluation (Wound Healing Model)



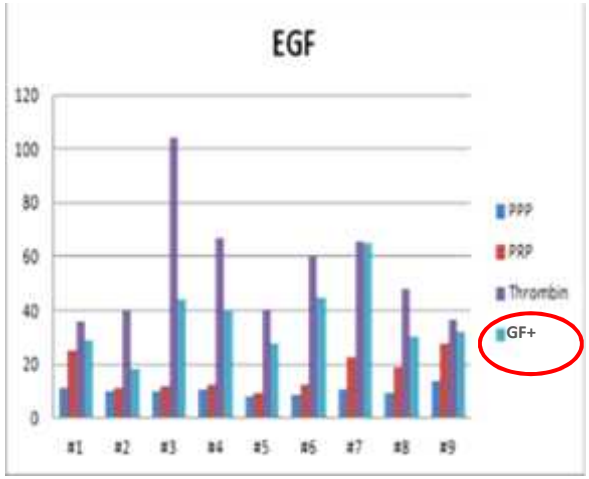
Otto, Jacques. *Dermal Volumetric Rejuvenation Utilizing Autologous Platelet-Rich Plasma*, January 2009.
Williams, Marlene. "What are platelets and Why are They Important?" Johns Hopkins Medicine, Aug. 2013.

Validation Evaluation

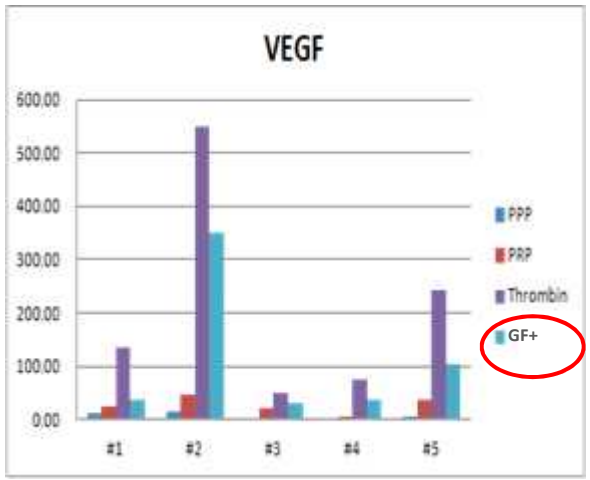
♦ Preliminary Experiment



♦ Epidermal Growth Factor



♦ Vascular Endothelial Growth Factor



* **PDGF**: Mitogenetic for mesenchymal cells and osteoblasts; stimulates chemotaxis and mitogenesis in fibroblast/glial/smooth muscle cells; regulates collagenase secretion and collagen synthesis; stimulates macrophage and neutrophil chemotaxis

* **EGF:** Stimulates endothelial chemotaxis/ angiogenesis; regulates collagenase secretion; stimulates epithelial/mesenchymal mitogenesis

* **VEGF**: Increases angiogenesis and vessel permeability, stimulates mitogenesis for endothelial cells

(1) Ballermann, Barbara, et al. *Kideny International* (1988) 54, S100-S108..

Comparative Chart

	GF+ from Elixheal	A Product	D product	P Product
Human Injection Possibility	**YES**	NO	YES	YES
Use of Chemical Substances	**NO**	NO	YES	YES
Activator Type	**Capillary stress**	Photo-activation (LED)	Atelocollagen	Batroxobin and Calcium Gluconate
Preparation Time	**3 min**	10 min	5 min	15 min
Drawbacks	**GF+ is the ONLY product in the market that does not use chemical substances, but physical stress. Thus, it could eliminate the possibility of outbreak of adverse effects that can occur from using chemical ingredients.**	Not intended for clinical application	- Fast retraction - Possible side effects due to the use of chemical substances	- Air contamination possibility - Possible side effects due to the use of chemical substances

Application Fields of PRP

DENTAL MEDICINE

- Dental extraction
- Dental implantation

SURGERY

- Cardio-vascular surgery
- Abdominal surgery
- Maxillo-facial surgery
- Orthopedic surgery
- Plastic & cosmetic surgery/dermatology
- Treatment of severe burns

RESEARCH & DEVELOPMENT

- Healing remodeling
- Autologous cell culture
- Autologous stem cell culture
- Cell differential
- Tissue regeneration
- Cell Separation

DERMATOLOGY INTERNAL MEDICINE GERONTOLOGY

- Cutaneous reconstruction and transplantation
- Re-implantation of Autologous cells, extemporaneous or cultivated in-vitro
- Ulcer and chronic wound therapy (e.g. after radio therapy)

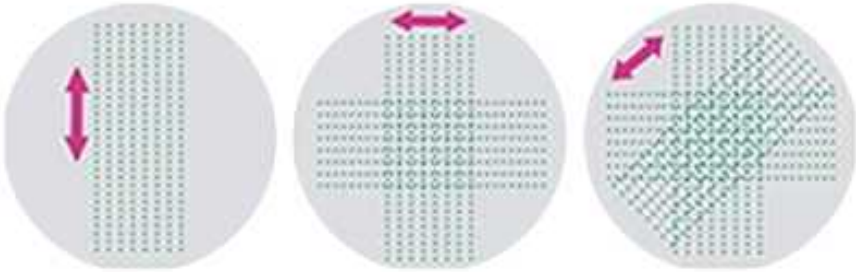
Advantages of MicroPRP for skin treatments

	MicroPRP	Filler	Botulinum	Laser
Lifting	○	X	X	○
Whitening	○	X	X	○
Elasticity	○	X	X	○
Wrinkles	○	○	○	○
Duration	1 year	6~12 months	3~6 months	Depends on the skin condition of the patient

Micro PRP and Micromesotherapy

Indications / Sizes	0.5mm	1.0mm	1.5mm	2.0mm
Slender Lines				
Light Color Spots	●			
Anti Ageing/Anti Wrinkles	●			
Acne, Pimples, Light Scar	●	●		
Deep Scars/Stretch Marks		●	●	●
Cellulite Treatment		●	●	●
Cosmetics Application	●			
Hair Regeneration, Regrowth	●			





It must be kept in mind that PRP need minimum 1 session each 15-20days.





The prp treatment can be combined with other treatment:
MicroPRP/Micro-Mesotherapy (on the same session!)

Filler, RF etc. (NEVER ON THE SAME DAY!)

FAQ

When Will I see Results?

Results vary depending on your body type and the condition being treated. On average, patients notice visible improvement in two to three months.

Will the results last?

The PRP restore the ideal physiological conditions.

The results do last, especially when combined with other therapies. We recommend regular maintenance visits.

Are the treatments painful?

You may feel a slight pinching or burning sensation when doses are administered. However the sensations drop automatically after about 45 minutes or slightly less.

Are there any side effects?

There are no side effects. A common post-treatment effect of PRP session is bruising and / or swelling, which usually resolved within 24-48 hours helping with Skinens.

To speed up the healing process, homeopathic supplement arnica taken orally is recommended.

Patients may experience temporary soreness. This will subside within 24-48 hours.

Are there any Restrictions?

In general, patients are advised not to wear makeup for at least 4 hours after facials, do not take hot showers for at least 6-8 hours. It is recommended that patients eat a meal high in protein, and avoid caffeine or other stimulants before treatment.

No FANS, No cortisone, solar noexposición for 48 hours before and after treatment.



The New Technology for Safe Platelet Activation

THANK YOU FOR YOUR ATTENTION!



ELIXHEAL
SKINCARE