

PRP

Platelet-Rich Plasma



PRP

(Platelet Rich Plasma)

Advances in cell-based technology have led to the development of regenerative clinical therapies, using the very mechanisms by which our bodies heal themselves.

What is PRP?

A concentrated suspension of platelets that provides an autologous reservoir of growth factors, nutrients and proteins derived from the patient's own blood.

How does PRP work – and what conditions can be treated?

Platelets play a key role in tissue repair, mediating the body's healing response to injury. PRP combines the action of growth factors released by platelets - which can stimulate cell migration, proliferation and differentiation - with other factors and proteins present in plasma which contribute to cell survival and to the coagulation process; the formation of clots provide a scaffold for cell migration and new tissue generation. We can see this in action every time we watch as a graze or a cut heals, as a scab forms and new skin grows over the injury site!

A growing body of evidence in human and veterinary medicine supports the use of PRP for **soft tissue injuries, skin wounds and in various treatment protocols OA.** ^{2,3,5}

Can PRP quality affect efficacy?

Many PRP systems are currently available, concentrating platelet levels from 1.2 to > 5 times the levels found in whole blood. Platelet concentration is not however the only consideration when using PRP in clinical practice. The absence of red blood cells and neutrophils defines high quality PRP - as these cell types are pro-inflammatory and have been reported to adversely affect clinical efficacy. ⁵

Cell Therapy Sciences PRP Systems

1. **VET-PRP** is a novel system providing easy, rapid and consistent preparation of PRP with an optimal cellular profile. This closed, sterile system uses a cell-selector gel to retain and concentrate platelets whilst significantly reducing white and red blood cell concentrations - all in a 5 minute single spin

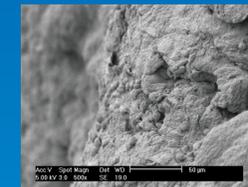
2. We also offer a unique laboratory **CTSL-PRP service** for pets. Five- fold platelet concentration & reduced levels of unwanted cells, this autologous PRP is available for special cases or for combination with our stem cell therapies

Our Own Research

Cell Therapy Science offer research-based therapies to meet the challenges faced by busy vets every day. We recognise the importance of convenience and ease of use, whilst conducting our own rigorous research to validate and support the use of our regenerative therapies in your patients. Our experienced team of PhD and MSc scientists, together with University collaborators, ensure we can offer high quality therapies and advice based on evidence-based research.

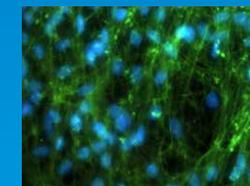
Our current PRP research includes optimising the preparation and cold storage of PRP therapies and investigating the direct effects of PRP on Mesenchymal Stem Cells (MSCs), to better understand the pros and cons of combination therapy. Here are two examples of our own research!

Canine MSCs migrate into PRP clots when they are together in culture.

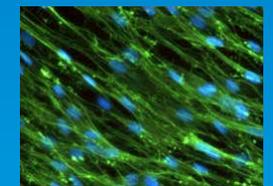


Scanning electron micrograph of MSCs inside a PRP clot (the cells migrated in from the culture flask!!)

The expression of key cytoskeletal proteins in MSCs changes when cultured with PRP as demonstrated by the immunofluorescence photos below:



Canine MSCs cultured in 10% Autologous Serum & stained for Actin (green)



Canine MSCs cultured in 10% Autologous PRP & stained for Actin (green)

VET-PRP™ ... and NEW VET-PRP-HA™



Approved for human use, now validated for vets

A single 5 minute spin for rapid, easy PRP preparation

Proven Growth Factor Levels¹

VET-PRP-HA: combination therapy in one spin

For when they can no longer get up to their old tricks...

Vet-PRP™

Approved for humans, validated for vets

- Rapid and easy preparation: a one-step sterile, closed system
- Light weight portable centrifuge - easy to use on equine yards
- Single 5 minute spin
- Reduces concentrations of WBCs (to < 10 %) and RBCs (to < 1%) compared to whole blood

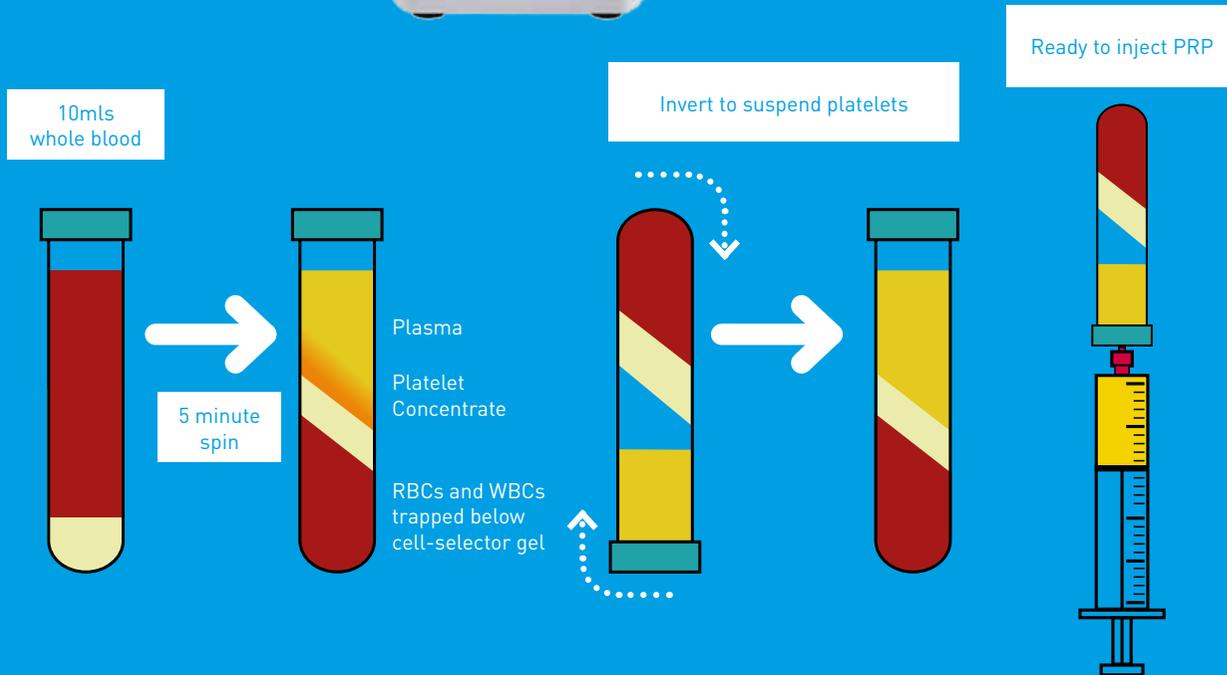


Vet PRP-HA™

Synergy in a single spin

- Combined treatment with the complementary clinical effects of PRP and Hyaluronic acid
- Immediate formation of HA and PRP in one easy step
- A system specifically developed and approved for preparation of PRP- HA association

Regenerative Medicine for Vets and Pets.
Do we have the right option for you?



Evidence-Based Clinical Therapies

Cell Therapy Sciences offer tailor-made stem cell therapies and PRP systems for your cases. We also conduct CPD events - and offer laboratory research and cell characterisation services if required. **Ask us about VET-PRP and our CTSL-PRP service. If we can do anything to help support the use of Regenerative Medicine in your clinic please contact us!**

- 📞 **Veterinary and technical advice: 07939 587 953**
- 📞 **All enquiries and stem cell updates: 024 76 323 217**
- Email: office@celltherapysciences.co.uk**
- 🌐 **www.celltherapysciences.co.uk**



References:

1. <http://dcareusa.com/userfiles/218file21200.pdf>
2. <http://www.sciencedirect.com/science/article/pii/S0737080609005437>
3. <https://www.ncbi.nlm.nih.gov/pubmed/19705027>
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Three Counties Equine Hospital Oct 2017:

We have been using the Vet-PRP system from Cell Therapy Sciences Ltd for several months and have been really pleased with it. We have routinely used the PRP for tendon and ligament lesions and find the PRP-Hyonate is very useful in joints and tendon sheaths.

In comparison to previous PRP systems we have used, the protocol is very simple and takes less than 10 minutes from taking the blood sample to injecting back into the horse. It is also portable which makes it easy to use on yards.

The service we get from Cell Therapy Sciences has been outstanding and they are always happy to help with any queries. In addition to ensuring the efficacy and safety of the system, they also understand the need to have a system which can be used quickly both in a hospital and road-based setting. We would be happy to recommend the Vet-PRP to any busy equine vet who wants a high quality, easy-to-use system.