



For an Unmatched Osteoarthritis Therapy for Dogs

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Orthogen® Device vet



Closed system



Inbuilt sterile filtration

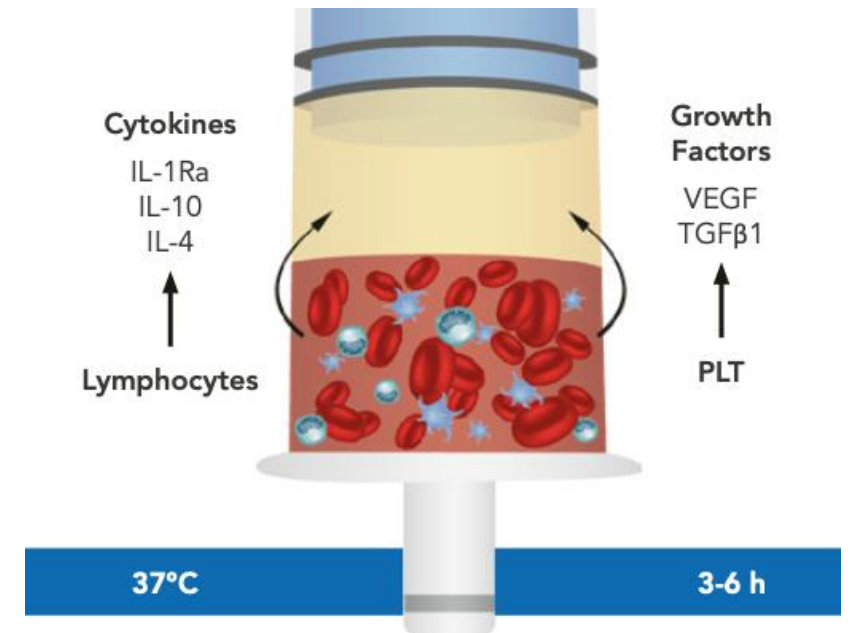


Automated serum transfer



Autologous Conditioned Serum (ACS) Profile

Content		Function
Cytokines	IL-1Ra	Anti-inflammatory
	IL-10	
	IL-4	
Growth Factors	IGF-1	Cellular growth
	FGF-2	
	TGF-β1	Anti-inflammatory
	VEGF	Angiogenesis

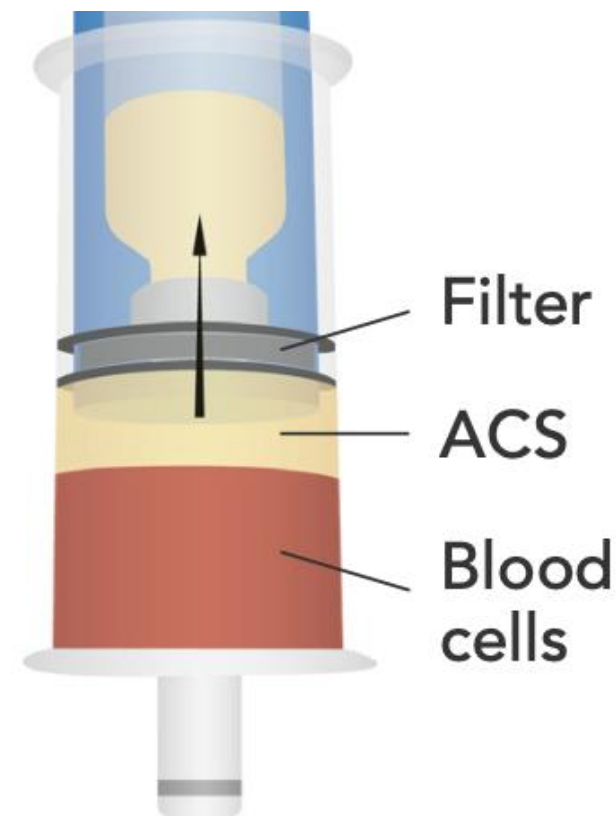


Soontarak, S., et al. In Vitro Anti-Inflammatory and Regenerative Effects of Autologous Conditioned Serum from Dogs with Osteoarthritis. *Animals* 2022,12,2717. <https://doi.org/10.3390/ani12192717>

ACS Processed by Orthogen[®] Device vet

Benefits

- whole blood secretome
- cell-free solution
- without coagulation factors
- devoid of immunogenic MHC antigens
- automatically **sterile filtrated** during centrifugation
- can be applied directly or stored for later use at **-18°C**



Indications



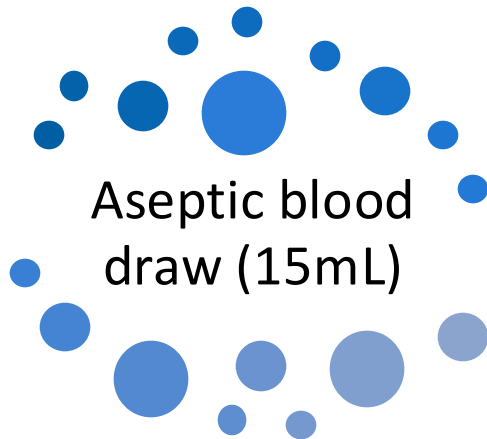
- Osteoarthritis (OA)
- Synovitis
- Bursitis

Orthogen® Device vet one-shot therapy with concomitant steroid injection

- Tendinopathies
- Ligament issues
- Muscle strains

Orthogen® Device vet one-shot therapy on its own

Orthogen® Device vet – sterile ACS preparation



3-6 h incubation



3 min 1500 g centrifugation



Devices

Incubator (e.g., MF-6W Incubator)

Centrifuge (e.g., Centrifuge with special inserts and counterbalance, M-BASIC centrifuge by MPW)



Drucker centrifuge

OD vet

Centrifuge Model	RPM	RCF	Time (min.)	Acceleration	Brake
MPW M-Basic	3100	1500	3	Slow	Strong
Drucker	2800	1470	3	-	9

Osteokine ProGen

Spin	Centrifuge Model	RPM	RCF	Time (min.)	Acceleration	Brake
1 st	MPW M-Basic	2600	1000	12	Strong	Slow
2 nd		3100	1500	10		
1 st	Drucker	2300	990	12	-	0
2 nd		2800	1470	10		





Processing

Evidence-based Therapy

15 dogs with bilateral Hip OA



T0 single i.a. injection

BCS+TA

TA

BCS

T0(2) single i.a. injection

BCS

BCS+TA

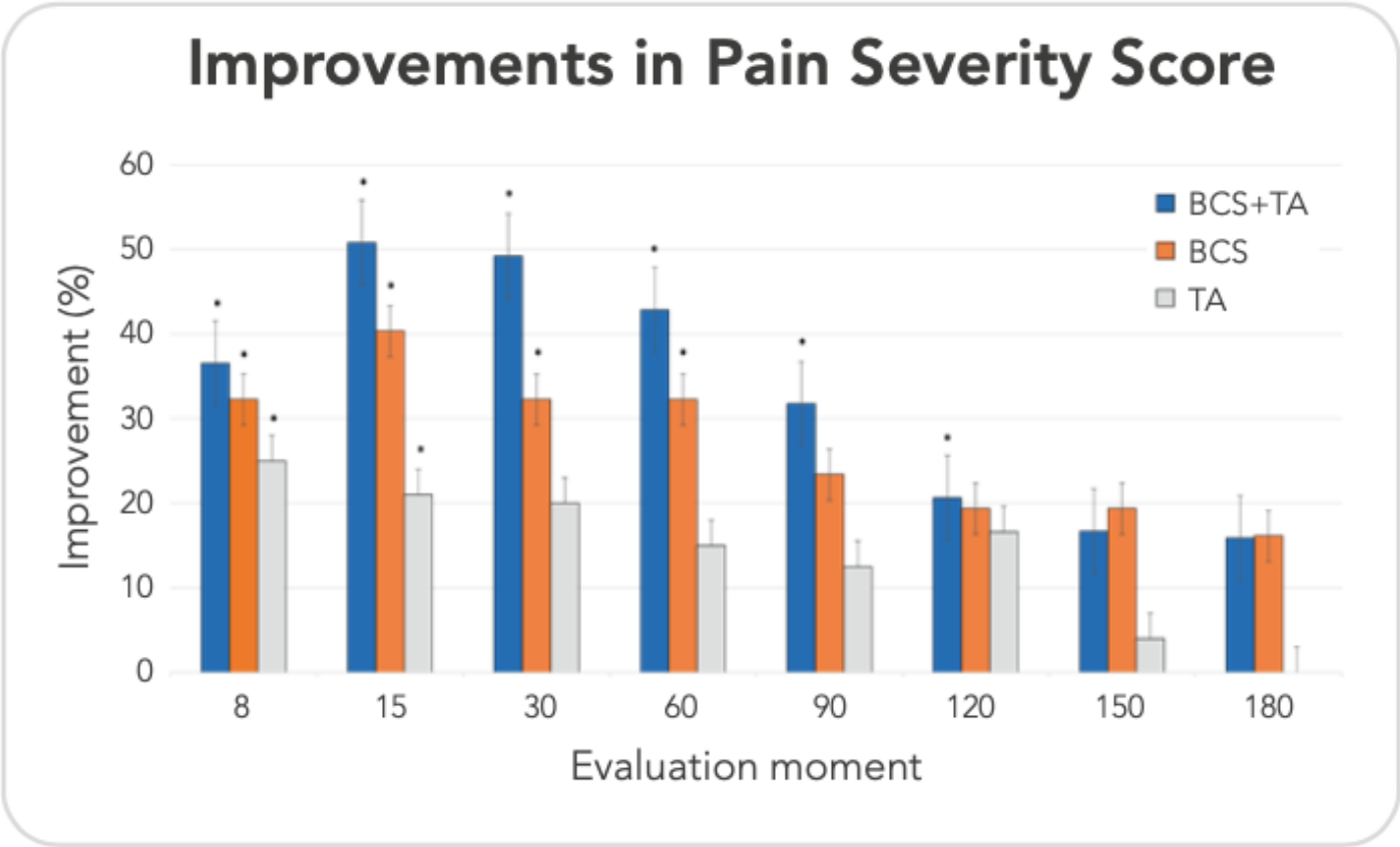
wash out period

Injection volumes:

BCS+TA: 3 mL BCS + 0.5 mL Triamcinolone 20mG (TA); BCS: 3mL BCS + 0.5 mL NaCl; TA: 3 mL NaCL + 0.5 mL TA

1. A Comparison of Intra-Articular Blood Cell Secretome and Blood Cell Secretome with Triamcinolone Acetonide in Dogs with Osteoarthritis: A Crossover Study. Alves JC et al, Animals, 12, 3358, 2022
2. A first report on the efficacy of a single intra-articular administration of blood cell secretome, triamcinolone acetonide, and the combination of both in dogs with osteoarthritis. Alves JC, BMC Vet. Res. 18:309, 2022

Evidence-based Therapy



* indicates a significant difference

A Comparison of Intra-Articular Blood Cell Secretome and Blood Cell Secretome with Triamcinolone Acetonide in Dogs with Osteoarthritis: A Crossover Study. Alves JC et al, Animals, 12, 3358, 2022

Therapy Concept (ACS + GC)

ACS

Cytokines, growth factors, lipid mediators, exosomes

Normalization of synovial fluid viscosity

Reduction of synovial membrane hyperplasia

Reduction of joint effusion

Reduction of i.a. radical load (nitric oxide)

Protective against GCs side effects

Long-term improvement of pain and function

GC

Triamcinolone

Anti-inflammation

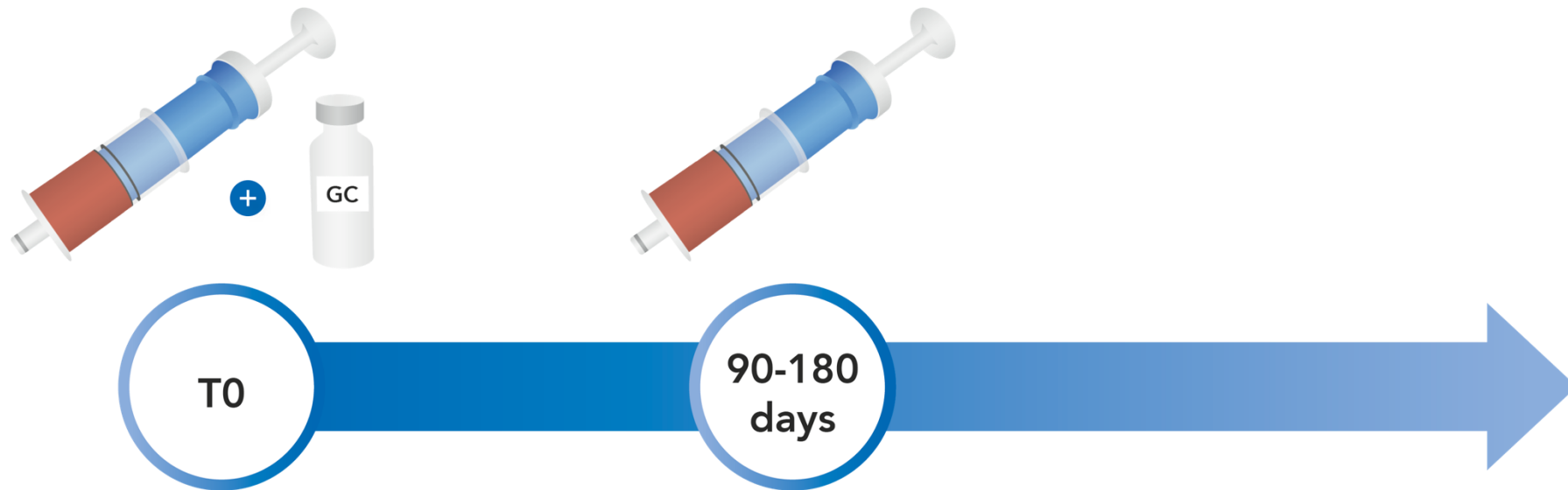
Positive on cartilage fibrillation, cell viability and osteophyte formation

Negative side effects

Short-term anti-inflammatory effect

Therapeutic Application Regimen

1. **Initial treatment:** administer a single intra-articular injection combined with glucocorticoids.
2. **Follow-up treatment:** a second intra-articular injection suggested (ACS only) at 3-5 months post-initial injection, if maintenance therapy is needed.



ACS

15 mL blood

3-6 h incubation time

3 min, 1500 g centrifugation

Indications

Osteoarthritis

Synovitis

Epidural infiltration

PRP

30 mL blood

No incubation

Centrifugations: 1st – 12 min, 1000 g; 2nd – 10 min, 1500 g

Indications

Tendon or ligament lesion

Muscle injury

Cyst or bone surgery

ACS in Wound Treatment

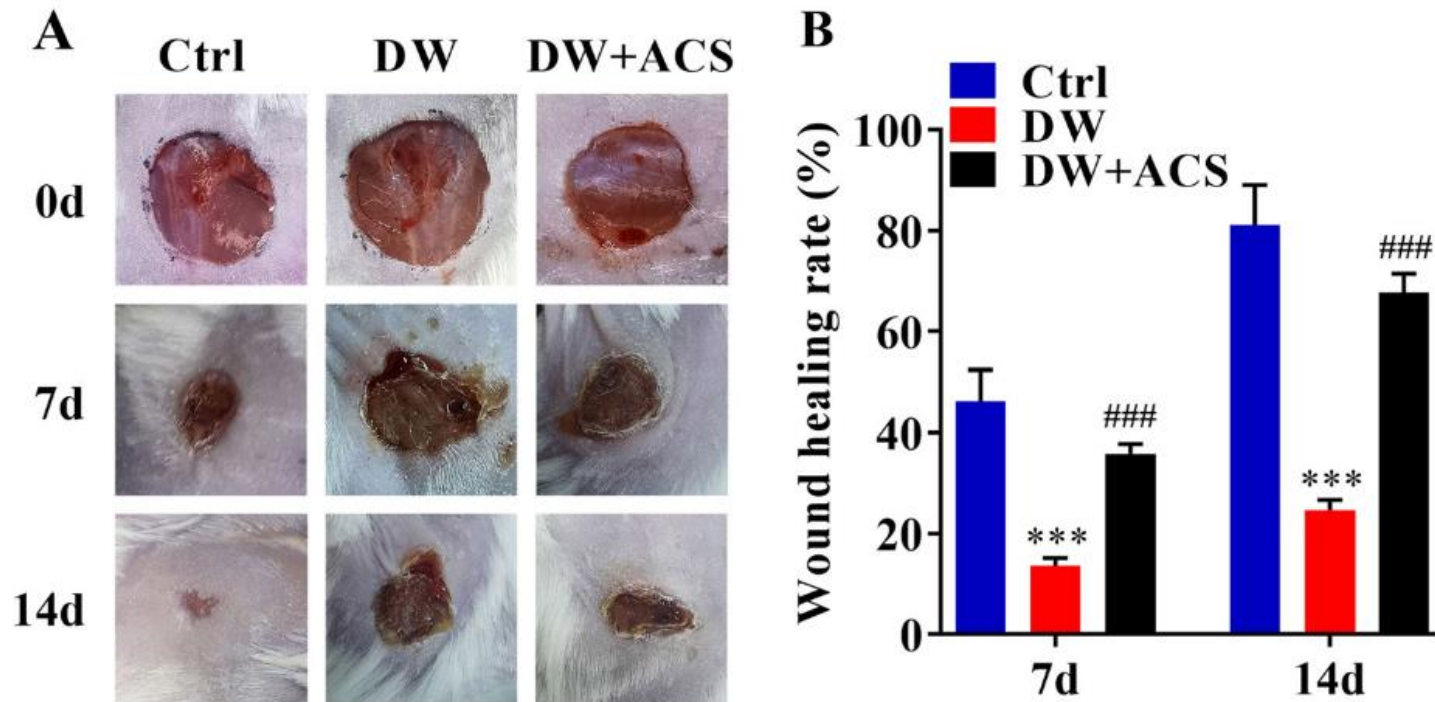


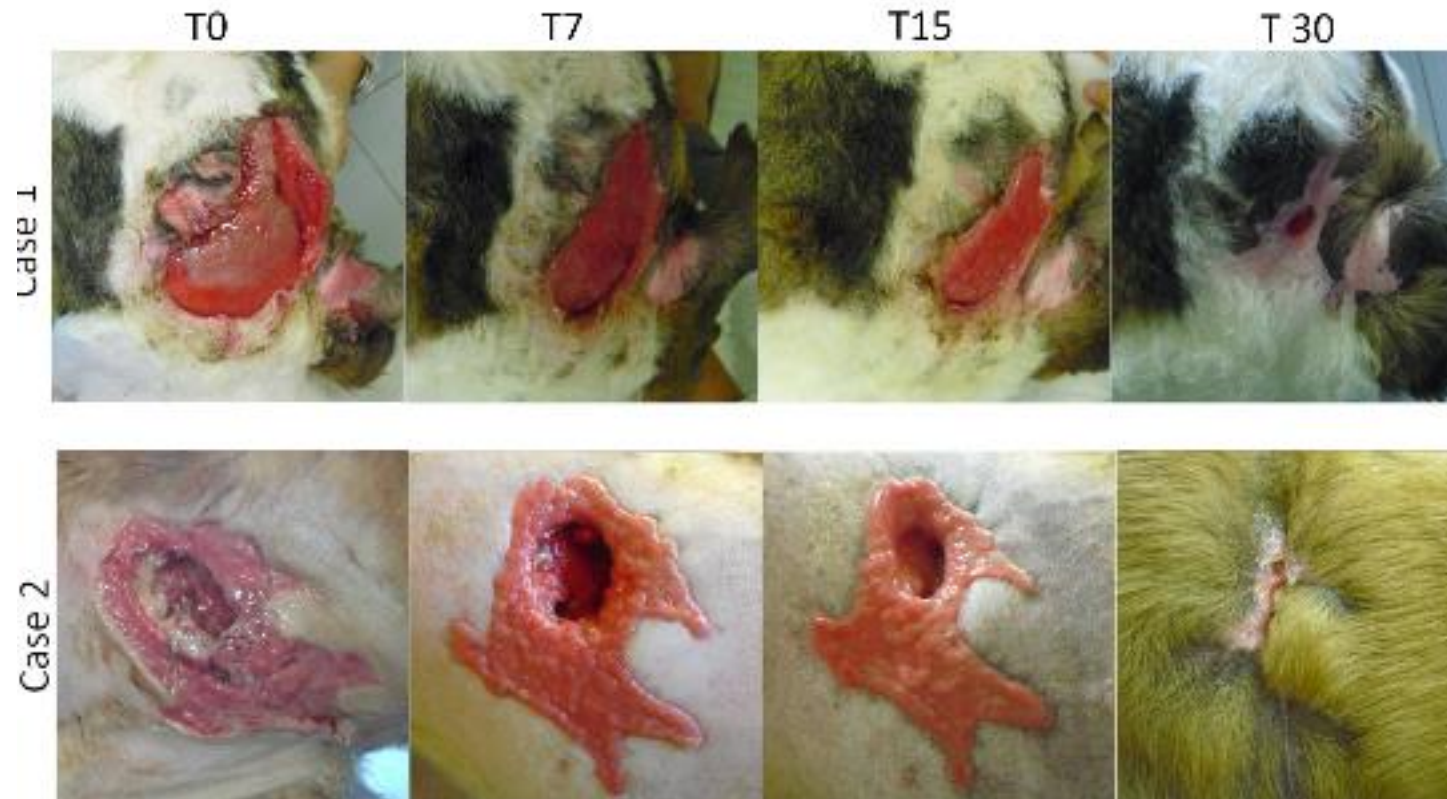
Fig. 1 The wound healing situation of diabetic mice. Macroscopical examination of wound at different time points in ACS treatment. The quantitative analysis of wound healing rate under the ACS treatment. *** $p < 0.001$ (vs. Ctrl), ### $p < 0.001$ (vs. DW)

”In summary, the application of ACS promotes wound healing in diabetic mice by enhancing fibroblasts.”

Li, H. Effect of Application of Autologous Conditioned Serum on Wound Healing in Diabetic Mice Through Inhibition of STING Pathway Activation. *Biochem Genet* (2024).

<https://doi.org/10.1007/s10528-024-10734-4>

PRP in Wound Treatment



Iacopetti I, Patruno M, Melotti L, Martinello T, Bedin S, Badon T, Righetto EM and Perazzi A (2020) Autologous Platelet-Rich Plasma Enhances the Healing of Large Cutaneous Wounds in Dogs. *Front. Vet. Sci.* 7:575449. doi: 10.3389/fvets.2020.575449



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