

WINT™

Targeted therapy for osteoarthritis



Wnt signaling pathway as major player in osteoarthritis initiation and progression

Osteoarthritis (OA) is a serious musculoskeletal disease with unknown etiology and no satisfactory treatment available^{1,2}.

OA induces pathological changes in the entire joint structure, including articular cartilage, synovial membrane and subchondral bone^{3,4}.

Overactivated Wnt signaling pathway is a key factor responsible for the OA induction and further progression^{5,6}.

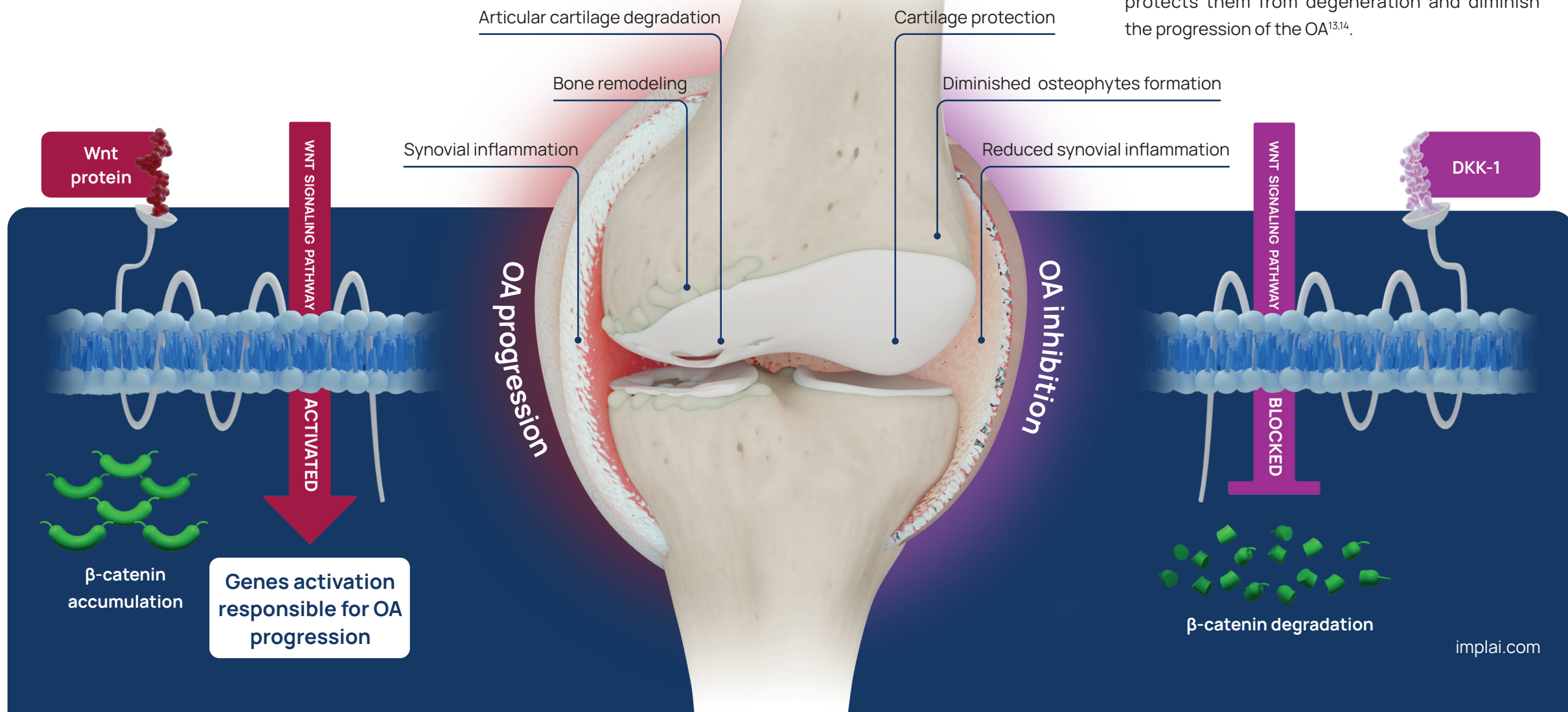
Advancing activation of the Wnt signaling pathway plays a major role in the OA pathology progression as Wnt controls the destructive processes in all joint structures^{7,8}.

Inhibition of Wnt signaling pathway as therapy in osteoarthritis

Overactivated Wnt signaling pathway can be restrained with various specific inhibitors, from which DKK-1 emerges as its fundamental antagonist^{9,10}.

DKK-1

- Is endogenous inhibitor of the Wnt signaling pathway¹¹.
- Inhibits the Wnt signaling pathway activation by preventing the ligand-receptor binding and thus restraining further OA-genes activity¹².
- Increased concentration of DKK-1 in the joint cells protects them from degeneration and diminish the progression of the OA^{13,14}.

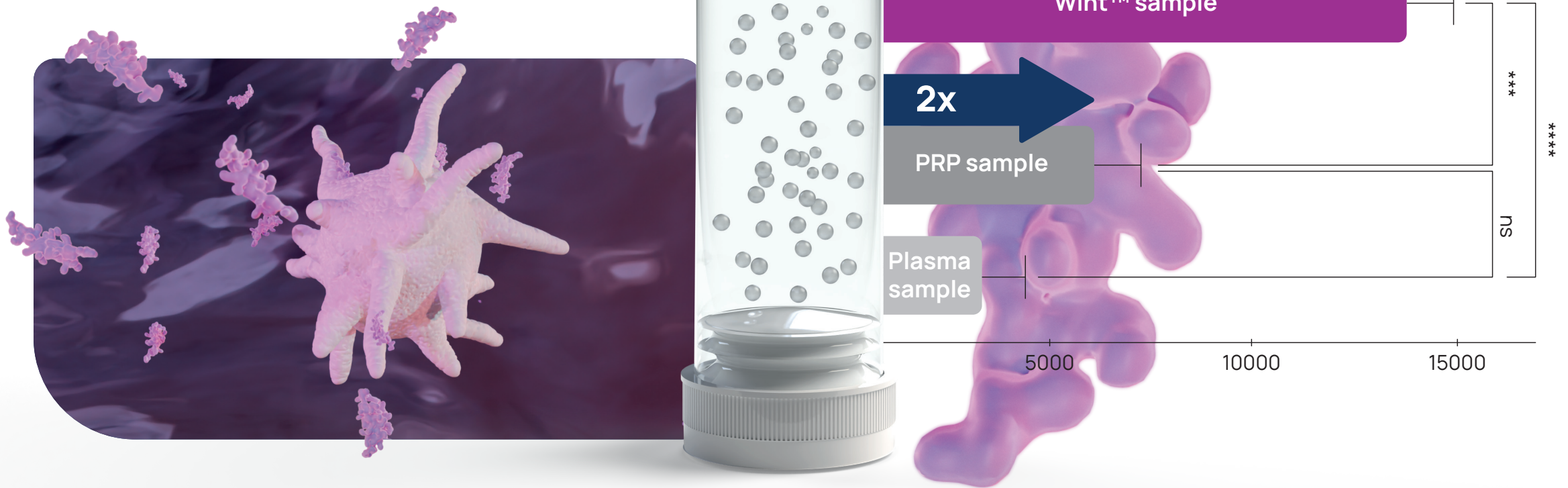


Wint™ kit provides autologous blood-derived product with high concentration of DKK-1

- Wint™ blood separation device contains a unique borosilicate spheres which posses a highly defined electrostatic charge on their surface,
- Borosilicate spheres act as a selective platelets (PLTs) activator, thus inducing a significant release of DKK-1 protein from them,
- Consequently, Wint™ separation device enables the obtainment of autologous blood-derived product rich in DKK-1 protein from patients' blood,
- The rich in DKK-1 protein blood-derived product can be used as highly specific injectable in OA-affected joint to inhibit overactivated Wnt signaling pathway in joint tissues,
- Therapy based on intra-articular injection of blood-derived product rich in DKK-1 protein is considered as an innovative targeted therapy in OA.

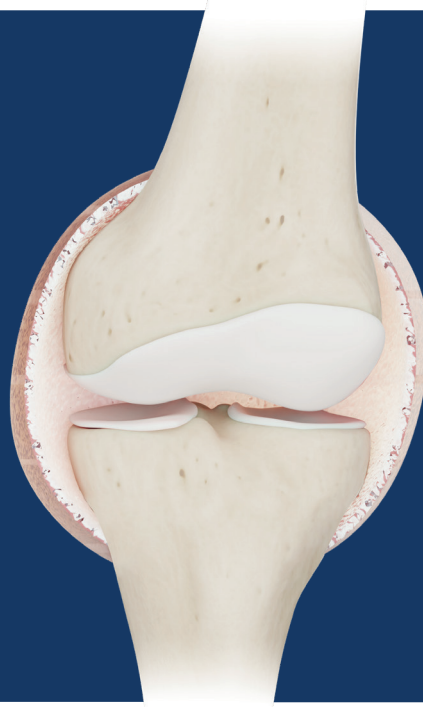
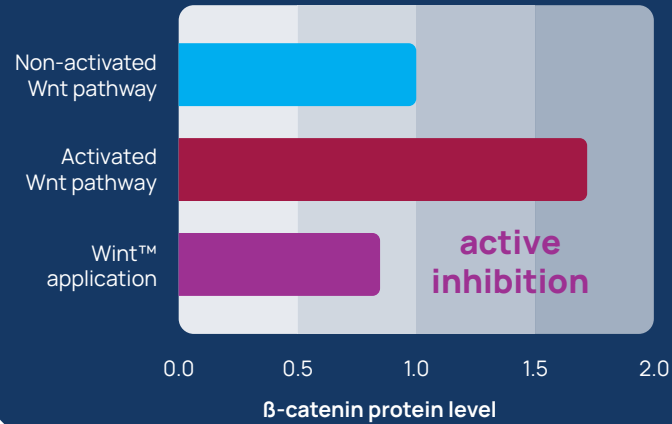
WINT™

Selective PLTs activator contained in Wint™ separation device induces efficient DKK-1 release

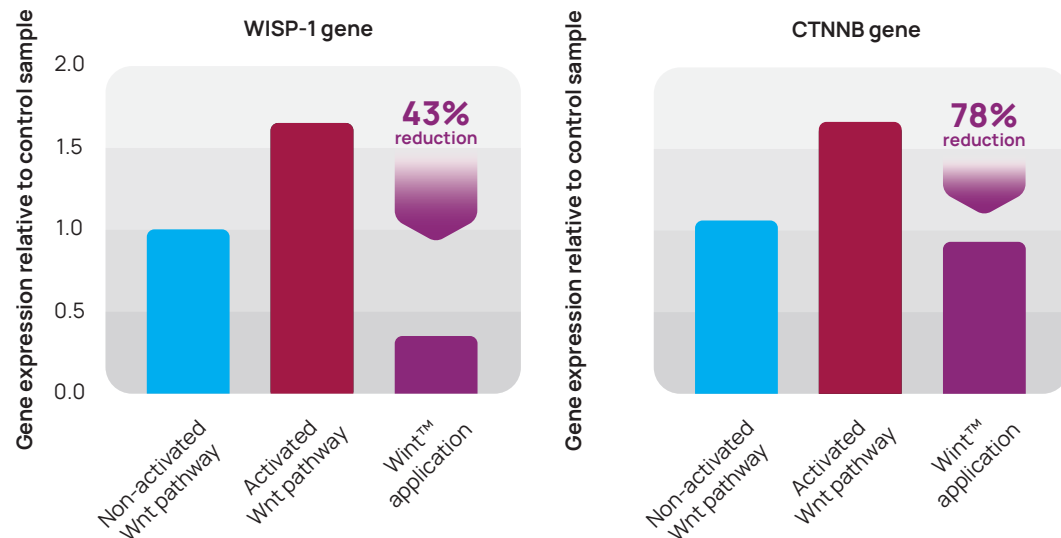


Injectable product obtained with Wint™ effectively inhibits an activated Wnt signaling pathway

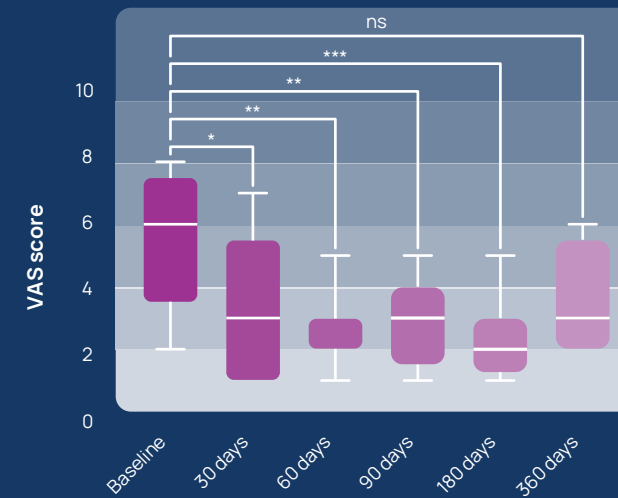
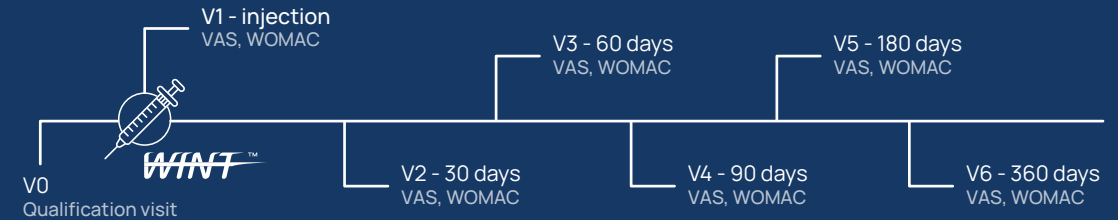
Autologous product rich in DKK-1 obtained with Wint™ can effectively inhibit active Wnt signaling pathway in chondrocytes and synovial fibroblasts as detected with reduction of β -catenin level.



High concentration of DKK-1 protein in the intra-articular product effectively reduces expression of genes determining the OA progression.

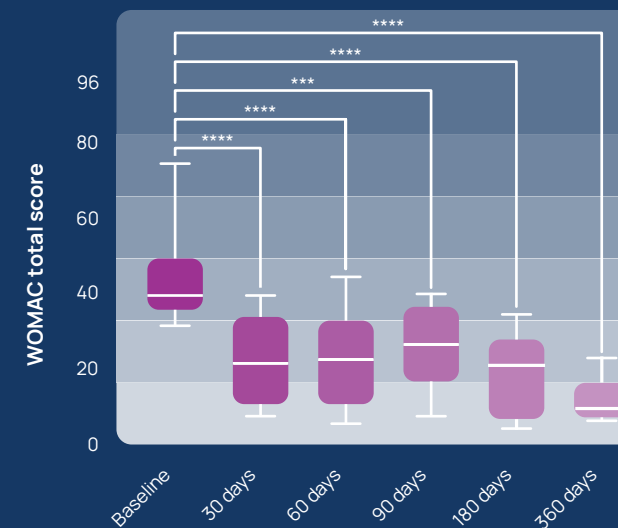


Single injection of autologous blood-derived product rich in DKK-1 protein is clinically effective in OA patients for up to 12 months



Pain relief

Single intra-articular injection of blood-derived product rich in DKK-1 results in long lasting pain relief in OA patients.



Functional improvement

Single injection of autologous product rich in DKK-1 protein results in long lasting functional improvement for up to 12 months in OA patients.



Advanced medical devices

Global marketing

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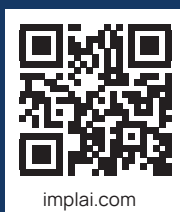
Biovico Sp. z o.o.

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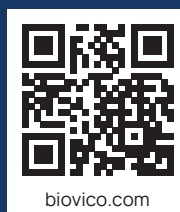
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