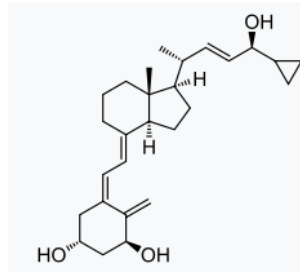


AVEC D: A New Drug Product from Vitamin D Derivative for Arthritis

Proof-of-concept

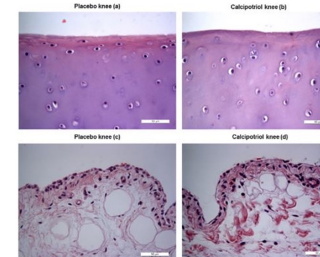
Unmet need	Current intra-articular treatments for arthritis are ineffective (hyaluronates) or harmful in repetitive use (glucocorticoids)
Market size	Customers: Pharmaceutical industry, hospitals, health-care providers, doctors, pharmacies End users: 300 million (osteo)arthritis patients Market size: €7 billion + 8% annual increase by 2029 (osteoarthritis)
Solution	The novel drug product for arthritis that is safe and as effective as current treatments with minimal side effects. To repurpose a vitamin D derivative , calcipotriol, which is used in the treatment of skin psoriasis for nearly 20 years.
Competition	Intra-articular glucocorticoids , such as Lederspan®, Kenacort A40®, Celeston Chronodose®, Depo-Medrol®, Solomet® Viscosupplements i.e. hyaluronates such as GenVisc 850® Synvisc One®, Gel-One®, Monovisc®, Hyalur®
Current state	Formulation development and testing We are seeking for industrial partners and investors Contact: johanna.huhtakangas@pshyvinvointialue.fi Julius.FrancisGomes@oulu.fi



- Calcipotriol, a vitamin D derivative, has shown anti-inflammatory and antiproliferative action
- Calcipotriol alleviates synovitis induced by Zymosan in rats (Huhtakangas et al. 2021)
- Calcipotriol does not have any major systemic or local adverse effects on bone or cartilage (Huovinen et al. 2019, 2023)

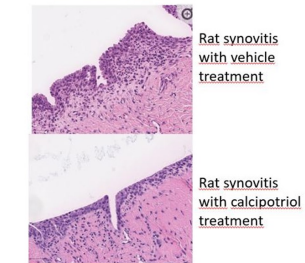


No local or systemic adverse effects seen when given into the knee of healthy sheep



Huovinen et al, 2019

Proof-of-concept study in the ZIA rat: Calcipotriol alleviates synovitis when given into the arthritic knee



Huhtakangas et al 2021



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