

# Vitamin D Analog "UW-05" for Skin Therapy, Parathyroid and Autoimmune Disease Treatment

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## Technology description

The hormonally active form of vitamin D, known as calcitriol or 1,25 dihydroxyvitamin D<sub>3</sub>, has shown promise for treating diseases ranging from osteoporosis to cancer to psoriasis. However, the hormone mobilizes calcium from bones and increases intestinal absorption of dietary calcium. Effective therapeutic concentrations can lead to hypercalcemia; a condition characterized by elevated blood calcium levels, alterations in mental status, muscle weakness and calcification of soft tissues and organs such as the heart and kidneys. Therefore, a need exists for new compounds that provide desirable therapeutic effects without causing dose-limiting hypercalcemia. UW-Madison researchers have developed a vitamin D analog, 2-methylene-(22E)-25-hexanoyl-24-oxo-26,27-cyclo-22-dehydro-19-nor-1 $\alpha$ -hydroxyvitamin D<sub>3</sub>. Known as UW-05, the compound shows high transcription activity, pronounced activity in arresting proliferating cells and inducing their differentiation. Bone calcium mobilization activity is lower compared to the native hormone. UW-05 may be useful against autoimmune diseases, some cancers, skin wrinkles and disorders, inflammatory problems and obesity. The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a vitamin D analog that may be useful for skin care, hyperparathyroidism and treating autoimmune diseases such as diabetes mellitus and organ rejection.

## Application area

Treatment of some types of autoimmune and inflammatory diseases

Anti-cancer agent

Skin and psoriasis care

Renal osteodystrophy treatment

Inhibiting fat-cell differentiation

## Advantages

Excellent intestinal calcium transport activity

Mobilization of bone calcium is dose-dependent.

Less likely to cause dose-limiting hypercalcemia than calcitriol

Can be administered in many forms

Institution

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