



## Vitamin D Analogs “1D-QM” and “1D-QMS” for Cancer, Bone Disease Therapy

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**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing vitamin D analogs with extended release activity that may be useful in the treatment and prevention of cancers and bone diseases.**

### Overview

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.

### The Invention

UW–Madison researchers have developed vitamin D analogs (20S) and (20R)-25-hydroxy-2-methylene-vitamin D<sub>3</sub>. *In vivo*, these compounds could act as prodrugs since 1-hydroxylation can occur in a regulated manner and extended vitamin release activity is predicted. The compounds exhibit high binding affinity and cell differentiation activity, suggesting anticancer properties. Also, high calcemic activity may be harnessed for bone disease treatments in which less frequent doses are preferred, like senile osteoporosis.

### Applications

- Prodrug use
- Therapy for bone diseases, osteoporosis and low bone turnover
- Prevention and treatment of leukemia, skin cancer, breast cancer, colon cancer, osteosarcoma and prostate cancer

### Key Benefits

- Pronounced anticancer, antibone disease activities
- Longer compound half-life
- 2EG-S is at least 10 times more potent than the native hormone in releasing bone calcium stores.
- Easily synthesized
- Can be administered in many forms

### Tech Fields

- [Therapeutics & Vaccines : Autoimmune disorders](#)

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- [Therapeutics & Vaccines : Vitamin D](#)

For current licensing status, please contact Rafael Diaz at [rdiaz@warf.org](mailto:rdiaz@warf.org) or 608-960-9847



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