



Vitamin D Analogs “2EG” and “T-2EG-S” for Treating Cancer and Bone Disease

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing vitamin D analogs that are 10 times more potent than the native hormone and may be useful against cancer and bone diseases.

Overview

The hormonally active form of vitamin D, known as calcitriol or 1,25 dihydroxyvitamin D₃, 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)- 1a,25-dihydroxy-2-methylene-vitamin D₃ and (5E)-(20S)-1a,25-dihydroxy-2-methylene-vitamin D₃. These compounds exhibit high binding affinity and cell differentiation activity, suggesting anticancer properties. Also, high calcemic activity may be harnessed for the treatment of bone diseases where less frequent doses are desired.

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 or 608-960-9847



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