Vitamin D Analog for the Treatment of Cancer, Psoriasis and Osteoporosis

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Technology description

The hormonally active form of vitamin D, known as calcitriol or 1,25 dihydroxyvitamin D_3, 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 non-calcemic compounds that provide desirable therapeutic effects without causing dose-limiting hypercalcemia. UW-Madison researchers have developed a novel vitamin D analog, 2-methylene-19-nor-20(S)-25-methyl-1alpha-hydroxycalciferol. This compound is characterized by relatively high intestinal calcium transport activity and relatively low bone calcium mobilization activity as compared to calcitriol, making it highly specific in its calcemic activity. This compound also exhibits high cell differentiation activity.
The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a vitamin D analog that is potentially useful as a chemotherapeutic agent, a therapeutic for psoriasis or an osteoporosis treatment.

Application area

Cancer prevention and treatment
Treatment of psoriasis
Osteoporosis treatment

Advantages

Strong cell differentiation activity
Less likely to cause dose-limiting hypercalcemia than calcitriol
Can be administered in many forms

Institution

Wisconsin Alumni Research Foundation

Inventors

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