Calcitriol is the active form of vitamin D that binds to the vitamin D receptors (VDR), increasing absorption of dietary Ca²⁺. Calcitriol is produced in the kidney from prodrug forms of vitamin D such as cholecalciferol. Calcitriol is commercially used in dietary supplements to prevent osteoporosis; it exhibits anti-osteoporotic, immunomodulatory, anti-inflammatory, anti-diabetic, anticancer, and chemopreventive activities. In basal cell carcinoma cells, calcitriol decreases hedgehog (Hh) signaling, suppressing cancer progression. In other models, calcitriol stimulates differentiation of skin cells and inhibits skin cancer cell proliferation and tumor formation. Additionally, this compound decreases activation of toll-like receptors (TLRs), protecting against the development of type I diabetes.

References

