

Abstract

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Electrochemical detection of depressed circulating levels of vitamin K1 in osteoporosis.

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OBJECTIVE: If gamma-carboxylation, by the vitamin K1 - cycle, of glutamate residues of bone-matrix peptides is essential for the formation of bone, the circulating levels of this vitamin might indicate the potential efficiency of this process.

FINDINGS: Methods involving HPLC with electrochemical detection have very recently been developed for assaying the low levels of vitamin K1 that occur in normal plasma. Using such methods, we found that the circulating levels of vitamin K1 in osteoporotic patients (who had sustained either spinal crush-fractures or fractures of the neck of the femur) were significantly lower than those of age-matched control subjects.

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