Abstract

Epigenome-Wide Effects of Vitamin D [†]

Carsten Carlberg

School of Medicine, Institute of Biomedicine, University of Eastern Finland, FI-70211 Kuopio, Finland; carsten.carlberg@uef.fi

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Abstract: Vitamin D₃ has, via its metabolite 1,25-dihydroxyvitaminD₃ (1,25(OH)₂D₃), a high affinity to the transcription factor vitamin D receptor (VDR), and thereby directly affects the epigenome of its target tissues. Changing the transcriptome results in modulation of physiological function, such as calcium homeostasis and the response of innate and adaptive immunity. Genome-wide datasets on the 1,25(OH)₂D₃-triggered binding of VDR, its pioneer factors PU.1 and CEPBA, histone markers and chromatin accessibility in THP-1 human monocytes compared to those obtained in peripheral blood mononuclear cells from vitaminD₃-supplemented human volunteers (VitDbol study) allow the assessment of the epigenome-wide effects of vitamin D.

Keywords: vitamin D; epigenomics; gene regulation; VDR; vitamin D intervention studies; chromatin; monocytes

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