Prediction of bone density from vitamin D receptor alleles

Nigel A. Morrison, Jian Cheng Qi, Akifumi Tokita, Paul J. Kelly, Linda Crofts, Tuan V. Nguyen, Philip N. Sambrook & John A. Eisman

Nature **367,** 284–287 (1994)

In order to expand our original observations of a relationship between bone density and vitamin D receptor (VDR) genotype and to examine other genes potentially involved in bone biology, we set out to recruit a larger set of identical and non-identical twins. On re-analysis of these newly collected and re-genotyped samples, we found reduced correlation of the VDR genotype with bone density in this larger sample of twin pairs. We made a formal announcement of this finding at the World Congress on Osteoporosis in Amsterdam on 20 May 1996.

As this larger twin sample included some of the twins reported earlier, we re-examined the original samples and found that in a proportion of these twins the genotype (by PCR) on new leukocyte DNA samples differed from those obtained on the earlier leukocyte DNA samples (also by PCR). It seems most likely that the misclassifications arose from mis-genotyping of DNA samples between extraction and PCR analysis. We emphasize that the other major part of the paper, showing a genotype effect in a population sample, is not affected by such mis-genotyping.

A role of the VDR alleles in bone biology has been reproduced in a wide range of clinical and physiological studies. Other studies have found an effect but in the reverse direction and some have found no effect on bone density or turnover or on osteoporosis prevalence. Thus, while there is disagreement about the strength of the effect, these and other studies in several population samples support the role of the VDR in the polygenic inheritance of bone density. □

Diverse sources of hippocampal unitary inhibitory postsynaptic potentials and the number of synaptic release sites

Eberhard H. Buhl, Katalin Halasy & Peter Somogyi

Nature **368,** 823–828 (1994)

The scale bar for all panels of Fig. 4 of this Article was 0.4 μm, and not 0.2 μm as published. □