

Letters to the Editor

Glycosaminoglycans in fluorotic bone

Dear Dr. Dinning:

The article entitled, "Glycosaminoglycan alterations in rat bone due to growth and fluorosis" appeared in *The Journal of Nutrition*, vol. 113 (8), pages 1576-1582, August 1983, written by Charles W. Prince and Juan M. Navia of the Institute of Dental Research and Department of Nutrition Sciences, University of Alabama Schools of Dentistry and Community and Allied Health, University of Alabama in Birmingham, Birmingham, AL 35294, has incited me to write this letter. Drs. Prince and Navia have claimed in their article that, "The principal changes in affected bone, i.e., increased amounts of chondroitin-6-sulfate and dermatan sulfate, have not been reported before." Claiming that they are the first to report changes in glycosaminoglycan (GAG) and its isomers in fluorotic bone is absolutely not true. The reasons are as follows.

In 1981, we published a report in *Experientia*, 37, 1097-1099, on the "Effects of fluoride on glycosaminoglycan of cancellous and cortical bone of rabbits" and provided data on the chemical analysis of cetylpyridinium chloride (CPC)-precipitable GAG both from cancellous and cortical bones revealing increased sulfate content. It has also been pointed out that in fluoride toxicity, both enhanced sulfation and sulfated GAG formation are taking place. Subsequent to this, we characterized the GAG from rabbit bone and reported the occurrence of dermatan sulfate in iliac crest bone in fluoride toxicity, and our article appeared in *Biochemical and Biophysical Research Communications* 105 (2), 711-716, 1982. This is the first report to appear in any scientific journal on the occurrence of dermatan sulfate (chondroitin sulfate B) in bone.

We also localized dermatan sulfate in rabbit trabecular bone, after F⁻ ingestion in

excess and correlated the formation of dermatan sulfate to cartilagenous lesion formation in cancellous bone. This report entitled, "*In vivo* chondrogenesis and histochemical appearance of Dermatan sulphate in rabbit cancellous bone" appeared in *Differentiation* 22, 235-236, 1982.

In 1983, we published yet another report in *Toxicology Letters* 16, 35-40, revealing the cellular and histochemical characteristics of osteoid formed in experimental fluoride poisoning, emphasizing enhanced GAG formation and dermatan sulfate occurrence.

The whole range of observations on calcified and noncalcified tissues of animal models and human patients afflicted with fluorosis that has emerged from my laboratory during recent years has appeared in a series of five articles in *Fluoride*, vol. 15, no. 4, pages 173-208, 1982.

I therefore feel fully justified in writing this letter strongly objecting to the false claim(s) made by Drs. Prince and Navia and wish to provide the correct profile of the information available on the topic.

I wish to record my gratitude to Mrs. E. Waldbott, of Warren, Michigan, for drawing my attention to the publication of Drs. Prince and Navia.

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