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## **Particle Induced X ray Emission Studies on Trace Elements**

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### **Abstract**

Particle induced X-ray emission (PIXE) technique was used to determine the concentration of 20 elements including P, Ca, Cu, Zn, and Sr in a number of rat bones samples and the IAEA CRM Animal Bone (H-5). Samples and standards were bombarded with 3.0 MeV external proton beams. The present study was designed to examine the effect of different doses of Parathyroid Hormone on bone trace element concentration in rats. The results showed that the bone mass and the bone biomechanical properties improved after the treatment, and contents of the elements increased except zinc. This study proved that the availability of PTH for treatment of osteoporosis from the viewpoint of elements. Details of sample preparation, experimental methods and results are given and discussed. The sample preparation procedure, experimental methods and results for the nondestructive instrumental analysis of bone are discussed in detail.

**Keywords:** PIXE, Trace Element, PTH