

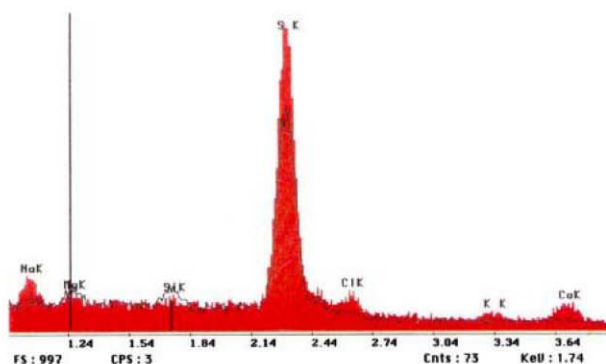
### Objective

To determine the ability of ACB Bio-Chelate 5 PF to smooth the cuticle of the hair as well as its capability to penetrate into the hair shaft. Energy Dispersive Analysis of X-rays as well as Scanning Electron Microscopy were used to evaluate the results of the studies. According to the results, ACB Bio-Chelate 5 PF is capable of significantly smoothing the hair cuticle for healthier and shiner looking hair while simultaneously nourishing it as it is capable of enhancing the delivery of minerals into the shaft.

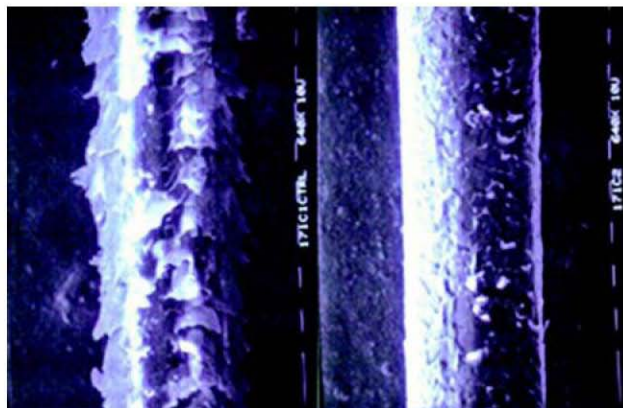
### Materials and Methods

Hair efficacy was performed employing ACB Bio-Chelate 5 PF, a mineral glycopeptide complex containing Mg, Fe, Zn, Cu, and Si. Scanning Electron Microscopy (SEM) was utilized to observe the surface architecture of the hair strands. Energy Dispersive Analysis of X-Rays (EDAX) was used to determine the elemental composition of the hair below the surface.

### Results



**Figure 1:** Elemental Composition by EDAX analysis of mineral in the hair



**Figure 2:** Scan Electron Microscopy of hair shaft following application of ACB Bio-Chelate 5 PF



# ACB Bio-Chelate 5 PF

## In vivo hair smoothing assay

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### Discussion

EDAX studies confirmed penetration of magnesium and silicon. The EDAX scan (Figure 1) shows the untreated controls in red and the ACB Bio-Chelate 5 PF treated samples as a black superimposed line. European blonde hair tresses were damaged by a 2x-bleach/wave process followed by a 30-50 % elongation of the individual hair fibers in order to stimulate excessive chemical and physical damage. Three fibers were cut into equal halves to produce six hair strands. Three hair strands functioned as the test materials, while the remaining three functioned as controls. The three damaged test fibers were treated with 100% ACB Bio-Chelate 5 and allowed to dry. Analysis of the treated fibers by SEM (Figure 2) demonstrated a smoothing of the hair cuticle, without a surface buildup of the treatment product.

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