Abstract
As a consequence of septic pulp necrosis, the entry of bacterial products into periapical tissues induces the release of pro-inflammatory cytokines, such as the tumor necrosis factor (TNF)-α. This pleiotropic cytokine is involved in the differentiation and activation of osteoclasts to induce bone resorption, a hallmark of asymptomatic apical periodontitis (AAP). Gingival crevicular fluid (GCF) has a great potential as a source of factors associated with osteoclastic activity. The aim of this study was to determine the levels of TNF-α in GCF of teeth with AAP and contralateral healthy controls. Methods: A total of 14 patients with clinical diagnosis of AAP were enrolled from the Clinic of Endodontics, Faculty of Dentistry, Universidad de Chile during 2009 and 30-second GCF samples were obtained with paper strips from AAP teeth and contralateral healthy controls. Total protein concentration and TNF-α levels were determined through biscoconitric acid method and ELISA assay, respectively. Paired t test and StataV11 software were used for statistical analysis. Results: Levels of TNF-α were significantly higher in GCF from teeth with AAP than controls when standardized by either 30s of sampling and total protein content. Conclusions: The present study provides preliminary data supporting that TNF-α levels in GCF reflect periapical status. Screening of TNF-α levels in GCF might represent a useful side-diagnostic tool to the monitoring of the apical status.

Keywords
TNF-α, asimptomatic apical periodontitis, gingival crevicular fluid.