Abstract: In order to clarify how we collect saliva for analyzing salivary protein in aged subjects who can not eat well, we compared the effects of suction, spitting and the swab saliva collection method on the yield of protein components in saliva samples from normal volunteers. The saliva collected by suction, spitting and the swab method were designated as, Saliva I, II and III, respectively.

The saliva volume collected by Saliva I was about 2-fold greater than that by of Saliva II and III. This is mainly due to the fact that saliva secretion was stimulated by the suction itself. The content of total protein, S-IgA, trypsin-like activity and human airway trypsin-like protease (HAT) were almost the same in Saliva I and II, and significantly lower in Saliva III than in Saliva I and II. Kallikrein activity was almost the same in Saliva I, II and III. The concentration of each total protein, S-IgA, kallikrein activity, trypsin activity and HAT in Saliva I were significantly positively correlated with that in Saliva II.

These results indicate that we can obtain information of change of salivary protein by analyzing saliva collected by suction method, although this method caused the stimulation of saliva to some extent. J. Med. Invest. 53 : 140-146, February, 2006

Keywords: saliva, S-IgA, kallikrein, trypsin-like enzyme, saliva collection
Reagents and Antibodies

Subjects

Collection of samples

Measurement of total protein

Assay of protease activity
Enzyme-linked immunosorbent assay (ELISA) for HAT

Contents of total protein, S-IgA, kallikrein activity, trypsin-like activity and HAT in the saliva samples collected by different methods (Table 1)
Relationship between contents of each protein component in the Saliva I and II

A: Section method

\[ y = 0.05x - 11.867; R^2 = 0.891 \]
\[ p < 0.0001 \]

B: Spitting method

\[ y = 1.695x + 14.36; R^2 = 0.328 \]
\[ p = 0.584 \]

C: Swab method

\[ y = 2.285x + 7.193; R^2 = 0.376 \]
\[ p = 0.059 \]
F. Michishige, et al.  
Saliva collection method and protein