Head and neck squamous cell carcinomas (HNSCC) belong to oral cancers, and their etiology is connected mainly with exposure to tobacco and alcohol. Generally accepted molecular biomarkers to guide management of HNSCC patient are still missing, and determination of molecular factors discriminating between cancerous and normal mucosa for proper delineation of tumor area belongs to critical issues in the field of molecular diagnostics of HNSCC.

**Aims**

- Direct comparison of the ability of proteins and lipids (i.e. two domains of molecular components of HNSCC) to discriminate cancerous and normal oral mucosa
- Estimation of their potential usefulness as a source of novel hypothetical biomarkers

**Introduction**

Peptide and lipid domain comprised 2435 and 2108 spectra components, respectively, which represented different molecular species and their isotope envelopes. Tissue regions corresponding to cancer and (normal epithelium) were delineated by an experienced pathologist after molecular image registration, and spectra from those two types of ROIs (regions of interest) were exported for further analyses.

**Results**

Average lipid spectra from cancer and epithelium ROIs were more similar than the corresponding peptide spectra – similarity index between pairwise analyzed cancer versus epithelium ROIs was estimated in the peptide and lipid domains.

**Conclusions**

The present study demonstrates significantly different abundances of a large number of cellular proteins represented by their tryptic peptides imaged by MALDI-MSI between normal and cancerous mucosa.

**DISCRIMINATION BETWEEN NORMAL AND CANCEROUS EPITHELIUM - CANCER CLASSIFIERS**

**DISCRIMINATION OF NORMAL ORAL MUCOSA FROM ORAL CANCER**

**BY MASS SPECTROMETRY IMAGING OF PROTEINS AND LIPIDS**

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