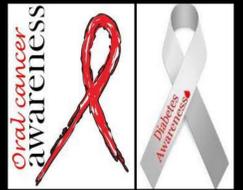


Salivary oral squamous cell carcinoma biomarkers – Exploring potential indicators in type-2 Diabetes



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Introduction

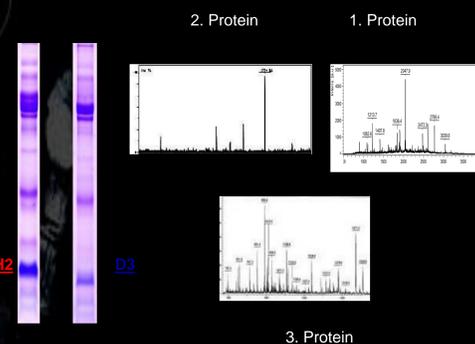
Recent epidemiological studies and animal experiments showed that there is a relationship between diabetes and oral squamous cell carcinoma. Our goal to find salivary biomarkers, which could refer to the risk of possible oral malignancy.

Results

The analysis demonstrated a different pattern of protein biomarker expression between diabetic and control subjects. A significant difference was measured in the expression of annexin-A11, tyrosine-protein phosphatase and peroxiredoxin-2, which were previously found also in oral cancer patients.

Methods

Under standardised circumstances we collected saliva samples of diabetic patients (n=17). As a control group we used saliva from healthy subjects (n=15). The samples were analysed using SDS- PAGE electrophoresis and MALDI-TOF/TOF mass spectrometry after tryptic digestion. The resulted proteines were identified by peptide mass finger printing. The peptide masses were searched by utilising the MASCOT Server 2.2 search engine (p<0.05).



Nr.	Diabetic	Nr.	Control
D001	1,2,3	D001	negative
D002	1,2,3	D002	negative
D003	1,2	D003	negative
D004	1,2,3	D004	negative
D005	1,2	D005	negative
D006	1,2,3	D006	negative
D007	1,2,3	D007	negative
D008	1		

1. The 7 spots of interest 2. The MS diagrams of the detected proteins

3. After searching them against the Mascot search engine:

Annexin - A11: Ca²⁺ dependent protein, regulation of inflammatory pathways, detected in previously also in OSCC patients¹

Peroxiredoxin-2 eliminates oxidizing agents caused by ionization, detected also in OSCC patients²

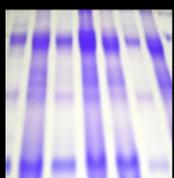
Tyrosine - protein phosphatase found also in colon carcinoma, needs further analysis, to understand its role in the pathogenesis of OSCC³

1. Patients datas

- The average age: **47,2 years** (between: 23 – 76)
- Female – Male ratio: **45 - 55%**
- Diagnosed with Diabetes ~ **18 years** (0,5 – 26 years)
- No cancer registered in the past medical history
- Negative stomatooncological status, no smoker volunteers

Conclusion

Our study requires further validation with a larger population, but for the first time we detected overexpressed peptides and proteins from human saliva, which are possible predisposing biomarkers.



2. SDS-PAGE Electrophoresis



3. Autoflex II TOF/TOF – Bruker Daltonics®