Salivary Diagnostic and Salivary Composition I

1644 - Analysis of MUC7 in Patients With Burning Mouth Syndrome (BMS) And The Controls Using Liquid Chromatography Mass Spectrometry (LC-MS)

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Description:

Title: 1644 - Analysis of MUC7 in Patients With Burning Mouth Syndrome (BMS) And The Controls Using Liquid Chromatography Mass Spectrometry (LC-MS)

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Abstract:

Objectives: To compare the O-glycosylation of salivary mucins in patients with BMS and the controls

Methods: Paraffin stimulated saliva samples from BMS (N=10) and Control women (N=10) were collected and stored at -80°C until further analysis. MUC7 was isolated from saliva using Sodium dodecyl sulfate-agarose/polyacrylamide composite gel electrophoresis (SDS-AgPAGE). After electrophoresis, MUC5B and MUC7 were blotted into a polyvinyl difluoride (PVDF) membrane and stained with alcian blue. The glycans were released from the PVDF membrane by reductive β-elimination and subjected to Liquid Chromatography Mass Spectrometry (LC-MS/MS). Glycans were annotated from their MS/MS spectra manually and validated by available structures stored in UniCarb-DB database (http://unicarb-
db.biomedicine.gu.se/). The % abundance was calculated by intensity of individual glycan to the total glycan intensity. Statistical analysis was performed using GraphPad Prism 6. Unpaired t test was used to analyse the difference in core structures between the two groups.

Results: Initial analysis of saliva samples on SDS-AgPAGE gel, revealed two clearly visible bands corresponding to the molecular masses of MUC5B (~ 1 MDa) and MUC 7 (~ 150kDa). Our initial analysis focussed on MUC7 data as MUCB varies between individuals depending upon the blood group type and secretor status. MUC7 data from LC-MS confirmed the presence of many oligosaccharide structures. The majority of the glycans were found to be core 1 and core 2 type glycans, with core 2 being more predominant in BMS.

Conclusions: Patients with BMS tended to have complex carbohydrate structures as compared to the controls suggesting possible altered glycosylation in BMS. This alteration in glycosylation may be related to the oral dryness experienced by the BMS patients as compared to the controls.

Disclosure Statement:
The submitter must disclose the names of the organizations with which any author have a relationship, the nature of the relationship, and the clinical or research area involved. The following is submitted: NONE

I have read the IADR policy on licensing.
Signed by Shikha Acharya

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