

DOI:10.21767/2472-1646.100057

Stress Levels in Buccal Cells Using MAWI iSWAB Protein Tubes

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Abstract

MAWI iSWAB protein tubes were used to detect stress levels in buccal cells of ten non-smokers and ten heavy shisha smokers. The results showed that stress levels were significantly higher in heavy shisha smokers compared to non-smokers. The MAWI iSWAB protein tubes were able to detect stress levels in buccal cells of heavy shisha smokers, indicating that these tubes can be used as a non-invasive method for stress detection.

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Stress Levels in Buccal Cells Using MAWI iSWAB Tubes. Biomark J Vol.5 No.1:2

Received: 19 March 2019

Introduction

Stress is a complex phenomenon that can affect the body in many ways. It can lead to a variety of health problems, including heart disease, high blood pressure, and depression. In recent years, there has been a growing interest in finding non-invasive methods for detecting stress. One such method is the use of buccal cells, which are cells found in the lining of the mouth. These cells can be easily collected and analyzed for stress-related markers. The MAWI iSWAB protein tubes are a new type of buccal cell collection device that has been shown to be effective in detecting stress levels in buccal cells.

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residues in proteins, 3-nitrotyrosine has been used as a protein
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 passage of charcoal-heated air through perforated aluminum foil P U Ā}CEIU Z]všZ šš μ•U •Z]•Z }CE]P
 which covers the tobacco placed in the head in order to generate u%o }oo Ÿ}v
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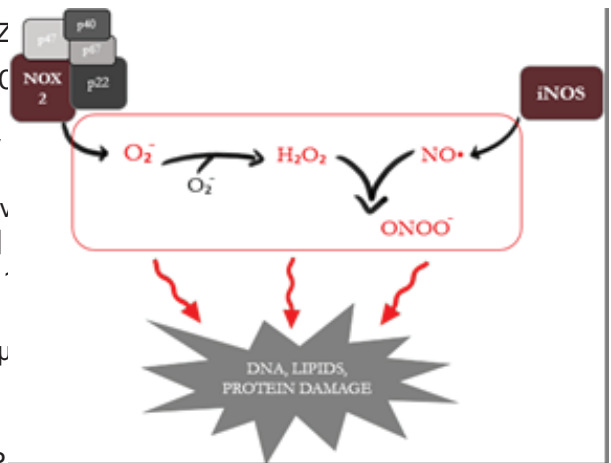
Waterpipe smoke is harmful. It causes impaired cellular growth
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 •šCE •• éi•X dZ (}CEu Ÿ}v } ((CE CE twice Swabs were then released into a TrIL iSWABTM Protein
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cells and vascular endothelial cells are the two main factors in the
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 which is one of many respiratory diseases caused by tobacco at 23°C. Supernatants were then removed for protein dosage
 •u}l X &μCEšZ CEu}CE U }ĀE] ŸĀ •šCE •• by Bradford Assay (following Sigma Aldrich protocol, Catalog
 to cardiovascular diseases, including severe stenosis and ischemic μu CE oōiō•X]CE šZ %oCE %oCE Ÿ}v
 Z CEš]• •X /š + š• o• } šZ Z CEš CE ŸvP CE]]šv X ĀE u P]š }CE }CE v
 of coronary artery disease. Besides, long history of waterpipe lead by spectrophotometer at 595 nm. Each tube was assayed in
 •u}l]vP]v CE •• šZ CE]•I } (Z Ā]vP CE duplicates. μo CE]• •• éiō•X

Waterpipe smoking can also be a factor that increases the chance
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]v šZ Ā š CE %o]μo •u}l •μ Z • š CE trušCE v}š}š}u%o}Ÿ}vš•Ā•ĀU PoÇ CE}oU v
 ZÇ CE} CE }v• éiñ•X then added to the samples. Then samples were boiled for three
 minutes before performing western blot.

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 u šZ} • }μo o •• Ÿu r }v•μu]vP U stained with Pierceau Red C for twenty minutes and then visualized
 o]u]ŸvP (š}CE• šZ š }μo (•μ By versa Doc imaging system (Bio-RAD).
]v•μ8]v Ç } (Ÿ••μ •X /v]Ÿ}vU šZ]• }oo Ÿ}v u šZ}]•

Later, nitrocellulose membranes were blocked with 5% BSA (pH 7.4) and incubated for 2 hours with PBS 0.05% Tween 20 and incubated for 2 hours at room temperature. Membranes were then probed with anti-p40 (1:1000) and anti-p22 (1:1000) antibodies. Membranes were then blocked with 5% milk and not BSA.



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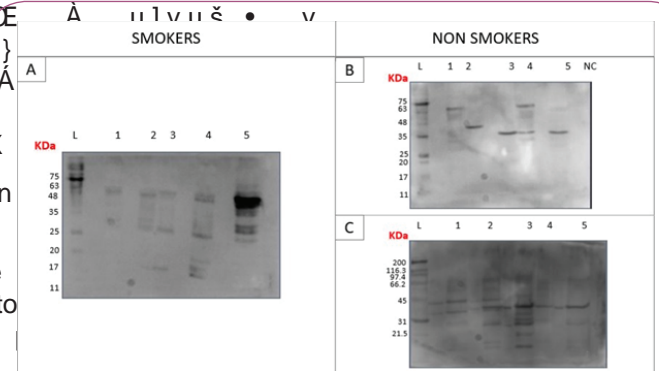
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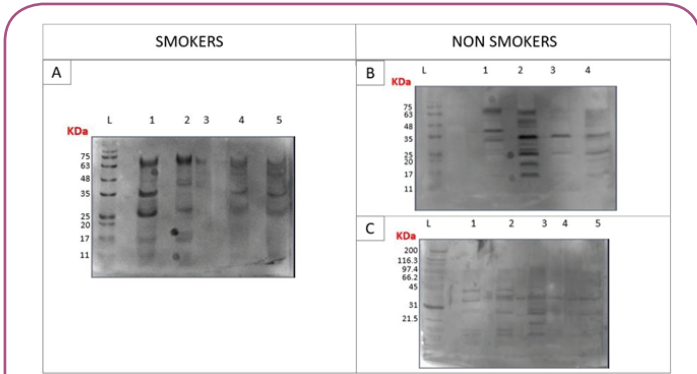
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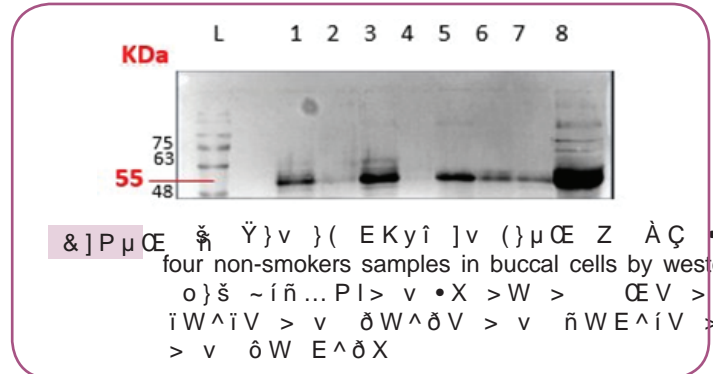


Western blot analysis of buccal cells from heavy shisha smokers and non-smokers. The blots show protein bands corresponding to the samples. The non-smokers section includes lanes L, 1, 2, 3, 4, 5, and NC. The smokers section includes lanes L, 1, 2, 3, 4, and 5. Molecular weight markers are provided for each blot.

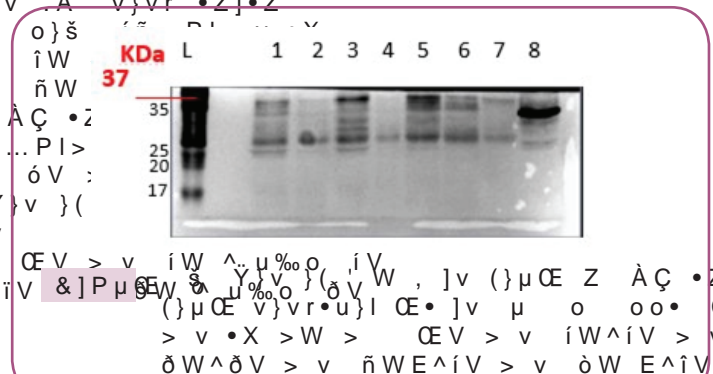
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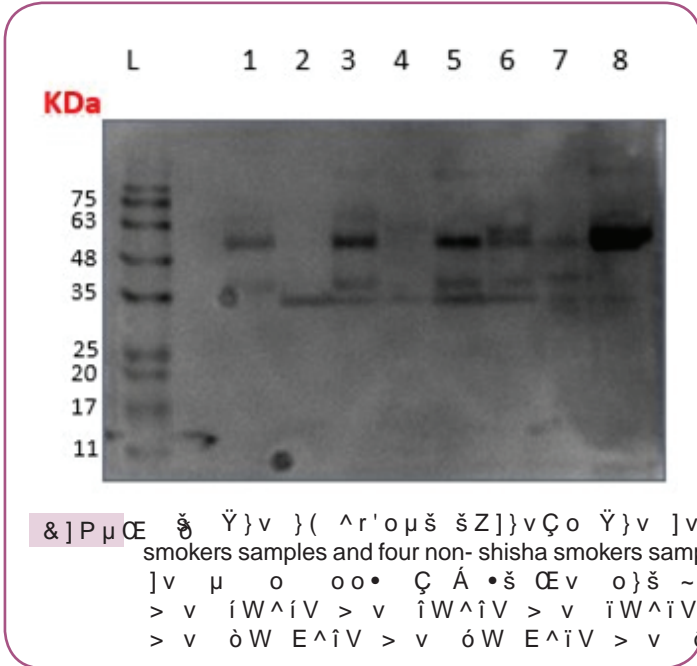
Western blot analysis of smokers and non-smokers. Lane 5: Sample 5.



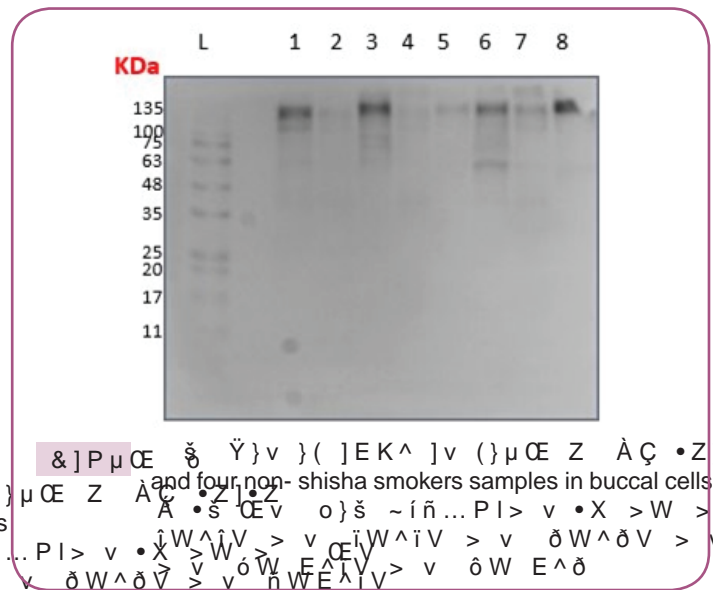
Western blot analysis of four non-smokers samples in buccal cells by western blotting.



Western blot analysis of four non-shisha smokers samples in buccal cells by western blotting.

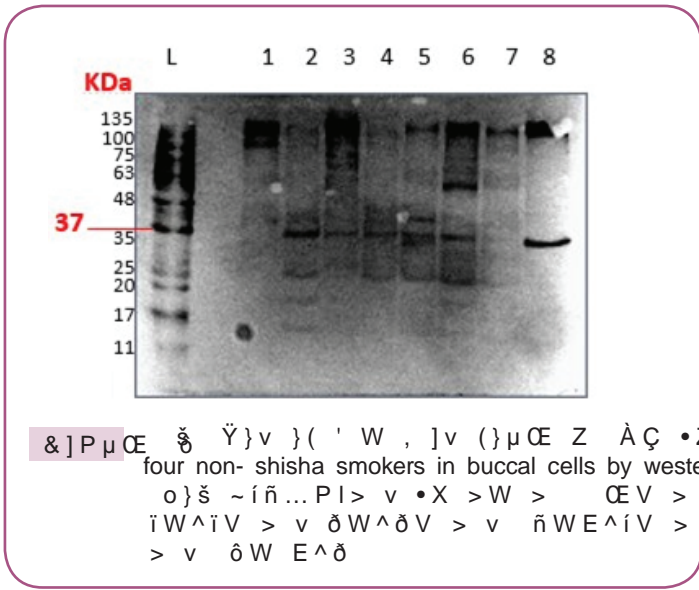


Western blot analysis of smokers and non-shisha smokers samples.



Western blot analysis of four non-shisha smokers samples in buccal cells by western blotting.

It is important to note that the presence of... and four non-shisha smokers samples in buccal cells by western blotting.



Western blot analysis of four non- shisha smokers in buccal cells by western blotting.

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