

**IMMUNOHISTOCHEMICAL DETECTION OF A  
DNA REPAIR GENE PRODUCT AND A CELL  
CYCLE REGULATOR IN ORAL LICHEN  
PLANUS**

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بِسْمِ اللَّهِ  
الرَّحْمَنِ الرَّحِيمِ

To the souls of my grandmas and  
grandpas, who have always dreamt of  
this day,  
Hope I made your dream come true...

To my lovely parents, brother & sister  
Thank you for your constant inspiration  
and endless faith in me...

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& coming baby,  
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find it useful,  
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## **List of Abbreviations**

**C3:** Complement 3

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**CDK:** cyclin-dependant kinase

**CDKI:** cyclin-dependant kinase inhibitor

**CDKN2:** cyclin-dependent kinase number 2 gene

**CK-2:** casein kinase II

**CLD:** Chronic liver disease

**DAB:** Diamino Benzidine

**DNA:** Deoxy-ribonucleic acid

**Fas:** Apoptosis-mediating surface antigen

**Fas-l:** Fas antigen ligand

**G1 phase:** gap1 phase of cell cycle

**G2 phase:** gap2 phase of cell cycle

**HCV:** hepatitis C virus infection

**HDACs:** histone deacetylases

**HIER:** heat induced epitope antigen retrieval

**HPV:** human papillomavirus

**HRP:** Horse Raddish Protein

**ICAM-1:** Inter-cellular adhesion molecule-1

**IgM:** Immunoglobulin M

**INK4:** inhibitor of cyclin-dependant kinase 4 family

**INK4a/ARF:** inhibitor of cyclin-dependant kinase 4 family/ alternate reading frame tumor suppressor

**KIP:** kinase inhibitory protein

**LC:** Langerhan's Cell

**LFA-1:** Lymphocyte function-associated antigen-1

**LOH:** Loss of heterozygosity

**LP:** Lichen planus



**M phase:** mitosis phase phase of cell cycle

**MMP:** matrix metalloproteinase

**MTS1:** multiple tumor suppressor gene1

**MTS1/CDK4I:** multiple tumor suppressor gene1/ cyclin-dependant kinase 4 inhibitor

**NES:** nuclear export signal

**NLS:** nuclear localization signal

**NK:** Natural Killer cell

**NPC:** nuclear pore complexes

**OLP:** Oral lichen planus

**OPL:** oral premalignant lesions

**OSCC:** oral squamous cell carcinomas

**PBS:** Phosphate buffered saline

**pRb:** retinoblastoma protein

**R1:** restriction point 1

**RNA:** ribonucleic acid

**S phase:** DNA synthesis phase of cell cycle

**SCC:** squamous cell carcinoma

**SPSS:** Statistical Package for Social Science

**TNF-  $\alpha$ :** Tumor necrosis factor- alpha

**TOP2A:** human topoisomerase II  $\alpha$  gene

**TOP2B:** human topoisomerase II  $\beta$  gene

**TopBP1:** topoisomerase II beta binding protein 1

**Topoisomerases:** Topos

**WHO:** The World Health Organization

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