BIOMARKER EXPRESSION IN AN ADHESIVE PATCH-BASED ASSAY FOR PIGMENTED LESIONS

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INTRODUCTION

- Early diagnosis of melanoma is critical for improved survival as melanoma is the deadliest of the common forms of skin cancer.
- The gold standard for the diagnosis of melanoma is a biopsy followed by histopathological analysis.
- Melanocytic nevi, which are very common benign neoplasms of the melanocytes, are often biopsied because they are mimics and precursor for melanoma[1]. Annually, 4.5 million pigmented lesions are biopsied in the United States[2].
- A subset of melanoma is difficult to distinguish from melanocytic nevi, resulting in diagnostic errors and worsened patient outcomes.
- Therefore, improved diagnostic tests, including the utilization of novel biomarkers, are being developed to improve clinical and histological diagnostic accuracy of melanoma.
- Moreover, non-invasive tests prior to surgical biopsy have been introduced, including an adhesive patch-based assay that tests the expression of melanoma biomarkers *PRAME* and noncoding long RNA *LINC00518*[3].
- Our prior work identified that S100A8, a member of the calcium-binding S100 family, is differentially expressed in melanomas versus nevi[4]. Specifically, S100A8 is expressed by the keratinocyte microenvironment of melanomas but not nevi[5].
- S100A8 is a melanoma biomarker of interest for an adhesive patch-based assay, because it is expressed in the epidermis, the most superficial layer of the skin[5].

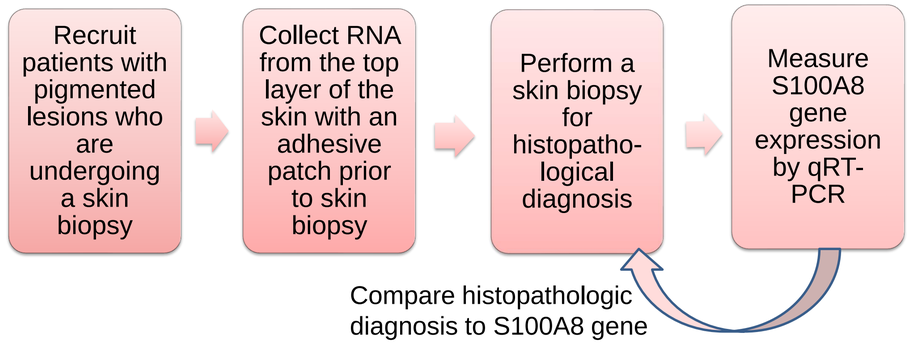
OBJECTIVE

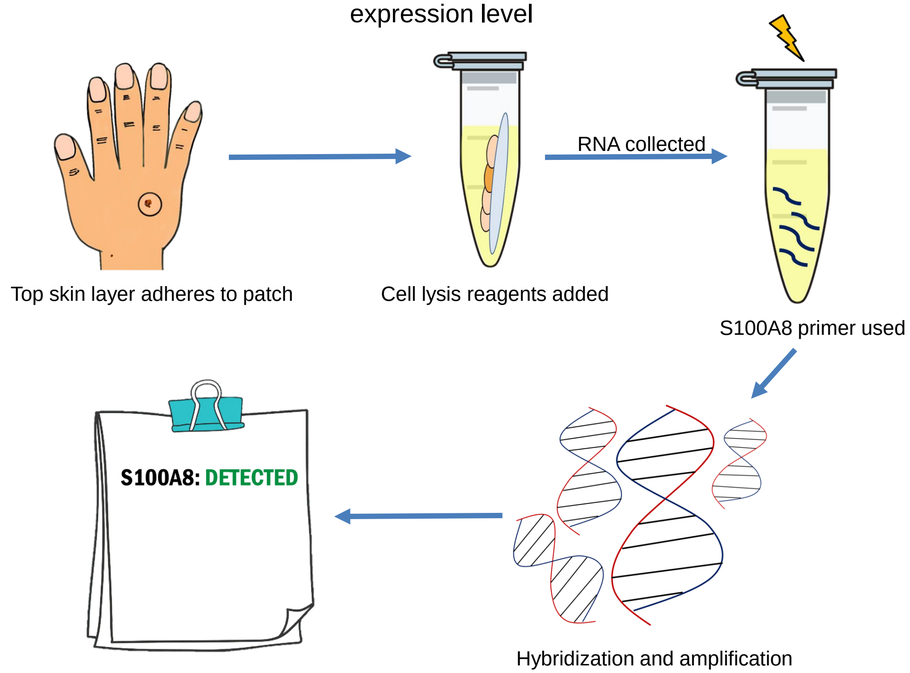
- S100A8 expression is upregulated in melanoma, and it will be detectable by an adhesive patch test.

METHOD

STUDY DESIGN & SETTING:
This is a prospective observational study, whose subjects are recruited from the UC Davis Dermatology Clinic.

OVERVIEW OF STUDY:





DISCUSSION

- This project aims to investigate gene expression of *S100A8*, a novel melanoma biomarker of the epidermal keratinocyte microenvironment, in pigmented lesions utilizing a non-invasive, adhesive patch-based assay.
- The utility of adhesive patch-based assays for pigmented lesion assessment has been previously demonstrated with an assay that tests the expression of melanoma biomarkers *PRAME* and noncoding long RNA *LINC00518.*
- As *S100A8* is expressed in the keratinocytes of the epidermis, the most superficial layer of the skin, it may offer additional benefits for adhesive patch-based testing that is based on collection of RNA from the top layer of the epidermis.
- The use of *S100A8* adhesive patch-based gene expression testing may facilitate a more accurate diagnosis of melanocytic lesions, in addition to clinical and histopathological assessment.

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