Single-Cell Analysis of Somatic Mutation Burden

Tech ID: 32698 / UC Case 2019-163-0

TECHNOLOGY DESCRIPTION

This invention is a single-cell genotyping assay for direct measurement of the mutational damage present in individual human skin cells. The ability to detect somatic mutations in single skin cells eliminates “averaging” effects from bulk tissue sampling to enable genomic profiles of individual cells to be captured and quantified.

ADVANTAGES

- Genotype and measure somatic mutation burden in individual skin cells
- Minimally-invasive measurement technique
- Quantitative measurements of mutational/UV-sun damage in normal skin

APPLICATION

- Biomarker to predict **risk of skin cancer** and **photo-aging**
  - Flag potentially pre-cancerous cells to
    - Facilitate **personalized screenings**
    - Enact **prevention strategies** to reduce risk of developing skin cancer
  - Proactively implement **lifestyle changes** in advance of physical signs of skin aging
- **Aging biomarker** to identify extent and rate of skin aging at molecular level

LOOKING FOR PARTNERS

To commercialize the technology

STAGE OF DEVELOPMENT

Proof-of-concept

DATA AVAILABILITY

Under CDA

RELATED MATERIALS

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OTHER INFORMATION

CATEGORIZED AS

- Medical
  - Disease: Cancer
  - Screening

RELATED CASES

2019-163-0

- The genomic landscape of individual melanocytes from human skin. Nature. 2020 Oct 586, 600-605.
- International Application No. PCT/US2021/019375

PATENT STATUS

Patent Pending

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