

PhD Part A:
Utilization of Artificial Intelligence Towards
Precision Medicine: Interplay Between
Chromosomal Instability and Immune System

Mateo Sokac, AU589901

Supervisor: Nicolai Juul Birkbak

Co-supervisors: Jakob Skou Pedersen, Christian Storm Pedersen

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Outline

1. Introduction

- A. Immune system
 - a. Innate Immune Response
 - b. Adaptive immune response
 - c. Role of cancer immunotherapy
- B. Chromosomal instability
 - a. Generation of copy number alterations in cancer
- C. Radiomics
 - a. What is Radiomics
 - b. Relevance to cancer diagnosis and treatment

2. Defining the role of chromosomal instability on cancer immunotherapy through the STING-cGAS Pathway

- A. Immune Response Characterization
- B. STING - cGAS pathway
- C. Validation on independent cohorts

3. Defining position-specific copy number signatures

- A. Copy Number Variation
- B. Developing the Method
- C. Results
- D. Validation on independent cohorts

4. Radiomics

- A. Artificial Intelligence in Medicine
- B. Data type
- C. Methods and Results

5. Conclusion

6. Future Plan

- A. Project and external stay
- B. Courses and Teaching