

The INTERCEPTOR working group 5 on biobanking aspects for biological tissues from Oral Potentially Malignant Disorders

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Rationale

Standard operating procedures (SOP) are crucial for the isolation, characterization, and biobanking of cells from tissues. However a number of challenges persists in OPMDs. The following will be discussed as part of the Working group 5 (WG5) activities:

Biological heterogeneity: There is a heterogeneous group of conditions associated with OPMD, which includes leukoplakia, erythroplakia, proliferative verrucous leukoplakia, oral lichen planus, oral submucous fibrosis, palatal lesions, lupus erythematosus, epidermolysis bullosa, and dyskeratosis congenita. This heterogeneity is reflected in the nature of the biological tissues.

Methodological heterogeneity: The understanding of current sampling techniques/biopsies and how these have been used of research purposes over the recent past can provide a further technical understanding of the extant methodological heterogeneity for tissue sampling.

Establishing specific SOPs and criteria for cell isolation, characterization, and storage will help maintain high-quality samples and data integrity by minimizing variations and errors that could impact the reliability of research outcomes.

Data Integrity and Traceability: SOP define proper documentation practices, including record-keeping of procedures, materials, and conditions. This ensures data traceability and integrity, respects legal and ethical frameworks (including data protection) and aids in the validation of research outcomes and compliance with national, regional and international regulations.

Supporting precision medicine research: The increasing technological developments, underpinned by high-throughput molecular methodologies require the well-documented, standardized collection of biological tissues, often in large numbers. The implementation of appropriate SOPs in biobanking allows for long-term storage and future research that is both reproducible and comparable, enabling precision medicine research in the long-term.

Purpose

One of the main aims of the Interceptor grant working group 5 is to evaluate and prioritise researcher needs on biobanking aspects for biological tissues from Oral Potentially Malignant Disorders (OPMDs). To this end, the networking and exchange of ideas and expertise would be encouraged, leading at a second stage towards a more formal evaluation of the biobanking priorities within the IMPD research and clinical fields.

Methods

The working group brings together multidisciplinary experts from Europe and beyond, including biomolecular researchers, pathologists, surgeons, dentists, medical oncologists, patient representatives as well as expert in medico-economics. The main focus for this year's PMD meeting will be: i) clinical and pathological diagnosis; ii) biomarker and biological mechanisms, iii) disease care management, iv) medico-economics, and v) stakeholder involvement including patients voice and ethics. These are very broad thematic categories that will allow for an inclusive view of current needs and priorities regarding biobanking.

Expected Results

The SOPs created in this project will ensure standardized methods and guidelines for proper isolation, characterization, and storage of OPMD cells for biobanking, as well as their responsible usage.

As part of our work, we are expected to deliver:

- M48 (11/2026) : Laboratory book on standardized guidelines for prospective biological sampling

Conclusions

OPMDs are under-research compared to other biological tissues for a number of reasons, including lack of availability, incomplete stratification, technical challenges in characterising, storing and propagating collected tissues and others. The working group is expected to highlight where the areas of need are, as well as areas of opportunities where targeted activities through the Interceptor network can be impactful.

