

## Description of the Contract

The order is carried out as part of the project *Differentiating the types of mild cognitive impairment and predicting the risk of their progression based on neurocognitive, dietary and intestinal microbiota markers, financed by the National Science Centre (2025/57/B/HS6/01441)*

1. The subject of the contract is the provision of shotgun metagenomic sequencing services for DNA isolated from stool samples.
2. Detailed description of the item for order:
  - **Library preparation:** The contractor will prepare metagenomic libraries from the provided DNA to enable sample multiplexing (indexing) and short-read sequencing (NGS). The contractor will select the specific library preparation method (including reagents and procedures), provided that the qualitative and quantitative requirements specified below are met. Sequencing: The contractor will sequence metagenomic libraries on a high-throughput platform using short-read technology. The run configuration (including read length and read mode, e.g., single-end or paired-end) will be proposed by the contractor in the proposal and selected to ensure the required data yield and quality. The contractor will ensure a sequence data yield of approximately 5 Gbp per sample (i.e.,  $\sim 5 \times 10^9$  nucleotide bases). The contractor is obligated to prepare digital material containing information on bacterial DNA in FASTQ file format for each sample.
  - Sample transfer is part of the contracting authority's obligations.
  - The contracting authority will provide isolated DNA material, which will be transferred in a buffer.
  - The contractor will provide the contracting authority with electronic files containing the results of the service.
  - The data of the test subjects will be anonymized for the contractor (by numbering them).
  - The service will be completed within a maximum of 6 weeks of contract signing.
  - The contractor will ensure the disposal of biological material.
  - The contracting authority will provide the contractor with 350 samples for testing.
  - The contractor should have experience in performing analyses for research projects, the ability to scientifically describe the prepared data, and assistance in preparing a scientific article [technical description of the analyses performed].