## III. Research Proposal Content (in Chinese or English):
## (Content should be no more than 30 pages, including up to 5 pages of references)

Please use "DFKai-SB" font for Chinese text and use Times New Roman, Arial, or Calibri font for English text. The font size should not be smaller than 12, and line spacing should be "single spacing". Margins (top, bottom, left, and right) should be no less than 2 cm. If there are key images in this research proposal, the resolution should be no less than 300 dpi.

1. Background of the Research Proposal：Please provide a detailed description of the significant disease or health issue that this research proposal aims to address or resolve. Include the proposal's forward-looking aspects, innovation, clinical and international competitiveness, as well as a review of key references. An analysis of the current status of international research and international competitiveness should be provided, clearly explaining the positioning of the proposal, its innovation, and what it has advantages compared to similar existing international research.

2. Specific Objectives：The project must utilize biomedical big data, with data sources not limited to domestic or international biomedical datasets or biobanks. The project must utilize domestic and international biomedical data, combined with emerging technologies such as artificial intelligence and big data computing and focusing on diseases, to explore the application of multi-omics health and medical data and develop marketable and innovative products for practical healthcare and health promotion.

3. Preliminary Research Achievements.

4. Research Methods, Process, and Implementation Schedule.

    (1) Data source, quantity, research methods, and its associated innovation. Describe the big data sources to be used (e.g., which domestic and international datasets), their reliability, the accuracy of dataset acquisition and its supporting documents, how to analyze and the research design to be used, the required datasets for artificial intelligence computation, how the datasets and variables are defined, whether the sample size is sufficient, whether the required computer processing power and related hardware configuration are adequate, and the expected outcomes.

    (2) Timely integration of the product development process. The project should follow the product development process starting from clinical needs and basic research, progressing through prototyping, preclinical and clinical validation, to market approval, thereby gradually realizing the clinical application of innovative technologies.

    (3) Anticipated challenges and the corresponding solutions.(e.g. how to impute or handle missing data, and the potential challenges that may be encountered during applications)

5. If the project aims to establish diagnostic standards, such as identifying biomarkers, it is necessary to propose the standards and conditions required for clinical applications and analyze the feasibility of achieving them. For example, if the goal is to identify a biomarker for clinical diagnostic purposes, what conditions need to be met (e.g., specificity, sensitivity)? how to confirm its effectiveness through validation testing and verification, or by comparing

Table CM03

indicators, to ensure it meets the initial research or application goals?

6.  Expected Tasks and Outcomes.

    (1)  Please list the project's phased milestones and endpoints by year.

    Table: Phased Milestones and Endpoints

    | Year | Phased Milestone | Checkpoint | Endpoints |
    |------|------------------|------------|-----------|
    | 114  |                  |            |           |
    | 115  |                  |            |           |
    | 116  |                  |            |           |
    | 117  |                  |            |           |

    Note: Phased milestones and final endpoints should be specific and achievable outcomes that can be evaluated with quantifiable indicators or specifications, as described below:

    Year 1: Feasibility study to screen potential targets and completion of theoretical basic research.

    Yea 2: Association and verification of preliminary research results with clinical applications, patent applications, or product prototyping.

    Year 3: Efficacy confirmation and validation of product development, or patent portfolio.

    Year 4: Product-related market approval application.

    (2)  Planning and implementation in practical healthcare and health promotion.

    (3)  Other anticipated impacts or contributions in terms of academic research, clinical applications, and social Influence.

7.  If there are similar with ongoing or proposed projects (including those with NSTC and other institutions), please explain whether they overlap and their relevance.

Table CM03

## IV. Integrated Research Project Members and Major Job Descriptions:

1. Integrated Research Project Team:

| Member | Name | Affiliated Institution/Department | Title | Major Job Descriptions in the project |
|---|---|---|---|---|
| Principal Investigator | | | | |
| Co-Investigator 1 | | | | |
| Co-Investigator 2 | | | | |
| Co-Investigator 3 | | | | |
| Co-Investigator 4 | | | | |
| Co-Investigator 5 | | | | |
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2. Major Descriptions of the Integrated Research Project:

   Please elaborate on the following points:
   (1) Necessity of Integration: Including the overall objectives, the framework for collaboration and division of work, and the relevance and level of integration between the principal investigator and co-investigators.
   (2) Human Resource Coordination: Including the principal investigator's leadership, the professional capabilities of the co-investigators, and their ability of cooperation and coordination.
   (3) Resource Integration: Including the sharing of instruments and equipment needed by the principal investigator and co-investigators, as well as the exchange of relevant research experiences and outcomes.
   (4) Coordination with the Applicant Organization or Other Units.
   (5) Expected synergistic effect.

Table CM04

# Diversity, Equity, and Inclusion (DEI) Checklist

| Categories | Item | Results |
|---|---|---|
| Diversity | 1. Research topics and anticipated outcomes suitable for diverse groups. | □ Yes □ No |
| | 2. Restricting research methods and designs to a specific group can apply the findings to all groups. | □ Yes □ No |
| Equity | 3. Data collection and analysis process is not influenced by biases from personal value judgments. | □ Yes □ No |
| | 4. Monitor and reduce biases to ensure they do not affect the participation of research team members. | □ Yes □ No |
| Inclusion | 5. Prepare appropriate language versions, assistive equipment, or applicable support measures to specific groups. | □ Yes □ No |
| | 6. Consider which groups may have significant impacts (positive or negative) as results of research finding. | □ Yes □ No |
| | 7. Neutral language or objective descriptions are used in research data records and reports. | □ Yes □ No |
| Implementation Plan | 8. Establish a mechanism to monitor DEI implementation regularly. | □ Yes □ No |
| | 9. Establish a mechanism to improve DEI outcomes. | □ Yes □ No |

**For items with a "No" check result, please provide supplementary explanations on how to meet the criteria:**

**Principal Investigator's Signature/Date**