# PREVENT CONCEPT APPLICATION

# − COVER PAGE −

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| --- | --- |
| **Application Title** |  |
| **Applicant, Degrees:** |  |
| **Institution:** |  |
| **Address:** |  |
| **Phone:** |  |
| **Email:** |  |
| **Co-applicant, Degrees:** |  |
| **Institution:** |  |
| **Address:** |  |
| **Phone:** |  |
| **Email:** |  |
| **Submission** | **[ ] Original** *or* **[ ] Re-submission (**previous submission date**)** |
| **Focus Area** | **Check All That Apply: [ ] Chemoprevention;  [ ] Immunoprevention; [ ] Biomarkers** |
| **Target High-risk Cohort** |  |
| **Agent(s)/Agent Class** |  |

**Instructions:** The concept application document should not exceed five pages (excluding cover page, references and appendices). It should outline the scientific nature of the proposed project and include the following sections: Abstract, Background/Rationale, Hypothesis/Research Objectives, Research Strategy, Specific Work Request, and Justification. Additional information that is relevant to the proposed concept can be attached as an appendix (see the list of allowable appendix materials below). Applications to the PREVENT Program are evaluated for clinical need, feasibility, alignment with NCI mission, novelty, and scientific merit. **Applications must be submitted in an Adobe Acrobat® PDF file format to: NCIDCPPREVENT@mail.nih.gov**

**For Resubmissions:**The NCI will accept only a single resubmission to the PREVENT Program. The resubmission should follow the same format as above, but also include responses to the comments and recommendations from the scientific reviews and explain how the application has been modified and strengthened. Please put your responses and comments on the cover page(s). New data from any work completed since the original application was submitted should be described in the main body of the application, if deemed crucial to support the concept.

# PREVENT CONCEPT APPLICATION

**Abstract**

Provide a 200-word maximum abstract of the proposed research.

**Key Words**

List up to five key words.

## Background and Rationale

Replace this text with the requested information: provide a summary of the field sufficient to allow an appropriate understanding of the scientific and medical context from which the cancer prevention opportunity emerges. Describe the target high-risk cohorts (i.e., individuals with an increased likelihood of developing certain types of cancer, such as current or former smokers, individuals with hereditary breast and ovarian cancer syndrome, Lynch syndrome, or familial adenomatous polyposis, etc), target cancers, targeted molecules and/or pathways, and molecular mechanism of action, if known. Please be concise and specific.

## Hypothesis and Research Objectives

Replace this text with the requested information: include a clear statement of the hypothesis or hypotheses to be tested, and define the objectives of the proposal. Specifically, address the scientific merit of your proposal by evaluating whether your hypothesis is supported by the field. Provide evidence to validate the target and/or the approach for pharmacological or immunological intervention based on *in vitro*, *in vivo*, or clinical studies from your research or the literature. Provide a summary of the key experiments you have conducted to date and preliminary data that are crucial to support your proposed research; manuscripts (published or in press) and supporting material can be included as an appendix (see the list of allowable appendix materials below). Include an assessment of the safety and therapeutic index, if known. When available, include information on the competitive landscape and comparator efficacy studies.

## Research Strategy

Replace this text with the requested information: clearly describe the intended research strategy, defining the specific activities requested from the NCI with the proposal; if the research activities necessary to move the concept forward to the clinic are not established or clear, please indicate this. Include specific details as necessary to demonstrate that the project has been well thought out (for example, if requesting assistance in the development of a pharmacodynamic assay, include a description of the analyte to be measured, strategy for biospecimen acquisition, assay platform, *etc*.). Address the feasibility of the proposed research strategy.

For preclinical drug development projects, describe the proposed development strategy, readiness of the primary assays, animal models for *in vivo* studies, biomarker analysis, and any supporting secondary assays, including structure-based, virtual, and selectivity assays. Supporting data can be included as an appendix (see the list of allowable appendix materials below). If specific animal models are to be proposed, clearly indicate that animals of both sexes will be used in accordance with the NIH guidelines unless studies in a single sex are justified (e.g., ovarian or prostate cancer models), provide the estimated number of animals required for the proposed research, and describe at minimum the following properties of the proposed animal models: (1) whether the proposed models recapitulate the target human disease(s); (2) whether the models are known to develop consistent tumor burden within a reasonable timeframe; and (3) whether the models are known to produce data predictive of cancer preventive efficacy vs. non-efficacy in humans.

If the research involves the use of marketed drugs for new indications (drug repurposing), describe: (1) whether new molecular mechanism(s) of action are proposed; (2) if new dosage, scheduling, and/or an alternate route of administration need to be established; (3) if new or previously unknown safety concerns are emerging from post-marketing surveillance; and (4) how the clinical translation is envisioned.

For new molecular entities, identify the agent (name, chemical name/structure, CAS No. if available), describe the development status of the compound and optimization strategy (for guidance, please refer to the [PREVENT Stage Gates](https://prevention.cancer.gov/major-programs/prevent-cancer-preclinical-drug-development-program-prevent/about-prevent-cancer-preclinical-drug-development-program)). Indicate whether the compound has undergone medicinal chemistry optimization; if not, describe the proposed strategy. Describe available enzymatic, cell-based, and ADME assays, and where appropriate, access to a structure-based drug design platform, available PK and PK/PD assays, and clinical readiness of the assays. Include an evaluation of functional activity, potency, and PK/PD relationship, with an emphasis on therapeutic index, if available; supporting data can be included as an appendix (see the list of allowable appendix materials). Please also indicate whether you have had meetings with the FDA (see the list of allowable appendix materials).

For immunopreventive agent development projects (e.g., preventive vaccines), describe the proposed development strategies, including the characteristics of the proposed immunomodulatory agent(s) or strategies, readiness of pertinent immune response monitoring assays, the availability of appropriate preclinical animal model(s) with key information as requested above for preclinical drug development projects, and primary and secondary study endpoints as envisioned. Describe immunological and/or molecular biomarkers deemed useful for the research. Supporting methods/data can be included as an appendix (see the list of allowable appendix materials).

## Specific Work Request

Replace this text with requested information: specify the technical expertise and resources required to implement the proposed research and to facilitate advancement of the agent into first-in-human studies, and which of these are expected to be provided by NCI. Examples of resources that can be provided by NCI include, but are not limited to:

* *In vitro* and *in vivo* efficacy studies and preclinical pharmacology
* Various carcinogen-induced and genetically engineered animal models of cancer
* Identification and evaluation of intermediate biomarkers
* PK and PK/PD modeling to evaluate efficacy and optimize dosing regimen
* Characterization of immune responses to vaccines and immunomodulatory agents
* Formulation optimization for enhanced bioavailability and clinical usefulness
* Analytical method development for investigational agents in bulk form and in biological fluids and tissues
* Scale-up cGMP and non-cGMP production of an investigational agent
* Stability testing for bulk and formulated material
* Preclinical Investigational New Drug (IND)-directed GLP toxicology studies
* Regulatory support
* Other resources to support drug development

**Source of Agent(s)**

Replace this text with the requested information: provide the following information where applicable for each agent proposed in the application:

* Identify the agent (name, chemical name/structure, CAS No. if available).
* Are you anticipating obtaining or synthesizing the agent(s) yourself or through the NCI Repository?
* Are agent(s) available commercially or are they patent protected? If not available commercially, from which vendor will they be obtained?
* Do you have an agreement in place with the vendor to supply the agent (please supply copy of the Material Transfer Agreement)? If not, indicate if you are planning to make any arrangements with the company to obtain an MTA.
* Please estimate the total amount of material that will be needed to conduct the entire study for each agent in grams or kilograms and provide an estimate of the total cost of each agent.

## Justification

Replace this text with requested information: provide a statement to indicate whether your proposal adequately addresses unmet needs in cancer prevention. Include a statement regarding how the proposed agent or intervention differs from existing cancer preventative interventions. Specify how the proposed agent or approach will advance clinical practice. Address the novelty of the concept. Detail the novelty with respect to the target(s), agent(s), biomarker(s), and approach to an unmet need. Finally, indicate the likelihood of the concept advancing into the clinic without the assistance of the NCI PREVENT Program.

## References

Replace this text with requested information: list of references.

# APPENDICES

## Intellectual Property Information

Applicant should include a list of any patents issued or pending either with respect to the agent or to any non-commercially available technology/material required for the development of the agent. In the event that an application requires the use of non-commercially available technology/equipment that is patented by a third party, Applicant must provide documentation that the patent holder does not object to Applicant’s use with the proposed project. For additional information on different patent and licensing mechanisms applicable to studies of third-party agents, see the intellectual property (IP) and Data Access page on the PREVENT website.

*Each PREVENT application must include the information described below signed by an authorized staff member overseeing IP and/or technology transfer at the Applicant’s institution.*The signature verifies that he/she has reviewed the PREVENT request and determined that the technology is or is not eligible for consideration by the PREVENT Program. If the technology is found not to be eligible for use as outlined in the PREVENT application, and it is central to Applicant’s proposal, submission to the PREVENT Program is not encouraged.

The following information is requested:

I. Details of all the following rights that your institution owns and that are used in the project (the “institution’s IP”):

* Patents and patent applications.
* Registered trademarks, applications for registered trademarks, and other marks.
* Registered designs, applications for registered designs, and significant other designs.
* Significant knowhow.
* Significant copyright works and other IP rights.

II. Details of all employees, consultants, and other parties involved in the development of the institution’s IP related to the PREVENT project submission. (Are there contributors outside the institution, and if so, what was their role in development?).

III. A complete list and brief description of all agreements with third parties related to the PREVENT project submission:

* Granting rights to those third parties under the institution’s IP.
* Granting rights under third party IP to the institution.

IV. A complete list and brief description of all confidentiality agreements with third parties related to the PREVENT project proposal.

V. Details of any:

* Claims related to the project proposal made by third parties against the institution that the institution has infringed a third party’s IP rights.
* Circumstances where a third party has or may have infringed the institution’s IP or other IP used in the institution’s business related to the project proposal.

## Applicant Biosketch

Applicant’s (and Co-applicants’) Biosketch should follow the NIH [standard](https://grants.nih.gov/grants/forms/biosketch.htm) format (Rev. 11/16). In the list of Applicant publications, please highlight any that are directly related to the proposed project by preceding them with a double asterisk (\*\*).

## Supplementary Information

Additional information that is relevant and crucial to support the proposed concept can be submitted as an appendix (see the list of allowable appendix materials below). Applications with appendix materials that are not specifically listed below may be withdrawn and not reviewed.

**Allowable appendix materials**

* Intellectual property (IP) information
* Applicant’s and co-applicant’s biosketches
* Supplementary information:
  + Articles (published or in press) that describe relevant data
  + Supplementary materials and methods describing animal models and experimental protocols in detail that cannot be accommodated in the main body of the application, but are integral to the proposed concept. Chemical structures, protein sequences, supplier information or synthetic scheme, if available.
  + Supplementary data (figures with legends and tables with footnotes) that cannot be accommodated in the main body of the application, but are integral to support the proposed concept
  + For applications proposing clinical trial support (for example, CGMP synthesis, IND enabling preclinical studies, etc):
    - Clinical trial protocols that are approved by the Applicant’s institution IRB
    - Pre-IND meeting minutes, if appropriate