

**重粒子線がん治療装置等共同利用研究課題申請書 (\_\_\_\_年度)**  
**Proposal for Research Project with Heavy Ions at QST-HIMAC (FY\_\_\_\_\_)**

<sup>*1</sup> 課題整理番号 Project No.	<input type="checkbox"/> 装置共用 C.U.	Date(yy/mm/dd) _____			年	月	日
<sup>*2</sup> 分類 Category	<input type="checkbox"/> 新規 New	<input type="checkbox"/> 継続 2 年目 2nd year	<input type="checkbox"/> 継続 3 年目 3rd year	<input type="checkbox"/> 4 年目新規 4th year	<input type="checkbox"/> 治療・診断 Clin & Diag	<input type="checkbox"/> 生物 Biology	<input type="checkbox"/> 物理・工学 Physics
研究課題名 Title of Research Project							
<sup>*3</sup> 課題申請者 Spokesperson	氏名 Name	Last/First/M			職名 Title		
	所属機関名、部署名 Institution						
	住所 〒 Address						
	電話 phone:		fax:		量研での身分 Status at QST		
	e-mail:						
所内対応者 Liaison at QST	氏名 Name			所属部課 Division	内線 ext.		
<sup>*4</sup> 研究分担者 List of Participants (Last/First/M)	氏名 Name	所属 Institution			職名 Title	量研での身分 Status at QST	
研究の目的と意義 Objective of Project							
MT に関する希望 Beam Time Request	加速粒子 Particle	エネルギー Energy (MeV/u)	強度 又は 線量 率 Inten sity	日数又は時間 Hours Requested	ビームコース Beam Line		
該当する項目が あればチェック Special Requirements	<input type="checkbox"/> 動物実験 <input type="checkbox"/> 遺伝子組換え実験 <input type="checkbox"/> 有害物質使用 <input type="checkbox"/> 微生物実験 Live Animals      Recombinant DNA      Hazardous Materials      Microorganisms						

日本語又は英語で書かれた「研究計画詳細」を添付すること。<sup>\*1</sup> 量研機構で使用するので記入しないこと。<sup>\*2</sup> 該当するものにチェック。<sup>\*3</sup> 課題申請者は量研機構との事務連絡も担当する。<sup>\*4</sup> 用紙が足りないときは別紙に記入し添付すること。

Additional information should be presented on separate sheets in either Japanese or English. <sup>\*1</sup>Office use only. <sup>\*2</sup>Check categories. <sup>\*3</sup>All correspondence will be sent to the spokesperson. <sup>\*4</sup>A separate sheet may be used to complete the list.

# INSTRUCTIONS FOR PREPARATION OF “DETAILS OF THE PROPOSAL”

## Directions

Provide information relevant to “Details of the Proposal” using the following format:

- \* Information should be typed on A4-size white paper.
- \* The name of a spokesperson should be typed in the margin of the upper-right corner.
- \* The length of the document should be 6 pages or less, including figures and tables.
- \* Because black-and-white copies will be distributed to the PAC review committee, the use of color figures is discouraged.

## 1. Background and objectives of the proposal

Background and objectives of the proposal should be presented in a self-explanatory manner. You should be aware that some members of the PAC review committee may not be familiar to specific details of the research field. The necessity for using heavy-ion beams for these experiments, as well as additional merits for using heavy-ion beams in related disciplines, should be emphasized.

## 2. Experimental Methods

The details of the experiment, including the setup of equipments, handling of targets, beam-irradiation schedule, data acquisition, etc., should be explained. If special devices are to be used, details of including logistics relating to installation and operation of the device should be clarified. A description of ion species, the irradiation field-size, energies, intensities, and quality of beams should be included. Beam time schedules or critical timing restrictions should be mentioned.

Plans for future studies should be outlined if the experiments are expected to continue in a 2<sup>nd</sup> or 3<sup>rd</sup> year.

## 3. Progress up to this point (if this is a renewal application)

Progress of the experiments at HIMAC up to this point should be summarized.

Additional procedures are requested if the proposal is in the 4<sup>th</sup> consecutive year. In this case, a more detailed summary of the last 3 years should be attached. This is a separate document with a length of around 3 pages. Contents overlapping with previous annual reports are acceptable.

## 4. Estimation of the beam time

The request for necessary beam time should be based on the experiment plan. This should include a description that emphasizes the feasibility of the entire experimental process.

## 5. Target material

### Biology Experiments

It is essential to characterize targets used for the experiments including *in vitro*, *in vivo* or other systems. The size, structure, and composition of any target containers should be described. Information relating to beam characteristics (e.g., size and uniformity) as well as absorbed dose and dose rates should be included.

For *in vitro* systems: any processing before and after irradiation, such as incubation, should be explained. This includes duration and necessary equipment.

For *in vivo* systems: the kind of animals, number of animals, and a method for transporting those animals, should be explained as well as handling and feeding procedures before and after irradiation.

Special attention should be devoted to the proposal when recombinant DNA, cells or animals are to be used. It is strongly recommended to contact the liaison person at QST-Chiba before submission in those cases.

### Physics Experiments

A list describing the desired targets should include the material, size, as well as desired ion, beam shape and intensity.

## 6. Safety Issues and Special Requirements

A detailed plan should be described if irradiated targets will be removed from a radiation-controlled area. Some procedures may be required for transporting irradiated targets that might be activated or contaminated.

Check the boxes on the front page of the Proposal for Research Project with Heavy Ions at QST-HIMAC if live animals, and/or recombinant DNA will be required. A detailed plan should be described. Additional documents and administrative work may be required for obtaining permission.

Check the boxes on the front page of the Proposal for Research Project with Heavy Ions at QST if hazardous materials or microorganisms will be required. The names and forms of such materials or microorganisms should be described. Also, safety measures when handling hazardous materials should be documented.

## 7. List of the publications

Papers published by participants should be listed using to the following instructions. This list should be succinctly related to the scientific objectives of this proposal. Failure to follow these instructions, or the inclusion of extensive or unnecessary information, may result in low scores.

- (1) The list of publications should be closely related to the proposal, and published during the last 5 years.
- (2) The list should be sorted chronologically from recent to old. Do not sort them according to authors.
- (3) A title, names of authors, name of journal, volume number, pages, year of publication should be included.
- (4) Authors who are also participants of this proposal should be underlined in the list.