



Medical-Radionuclides.eu

BIOEMTECH Athens, Greece

Infrastructure for preclinical studies in GLP environment from cells to in vivo level, proprietary eyes™ imaging desktop systems enabling real-time PET, SPECT, optical, and CT imaging



© PRISMAP+ 2026. This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

PRISMAP+ Biomedical Facility BIOEMTECH

BIOEMTECH Laboratories provide specialised services to pharmaceutical companies and academic/research institutions. Specifically, it provides a unique infrastructure and platform for preclinical studies for mice and rats in a GLP environment, starting from a cell level and going up to the in vivo level. The facilities support biodistribution studies, therapy efficacy assessments, GLP toxicology, dosimetry, and animal model development all in just one lab, door-by-door.

A key strength of BIOEMTECH is its proprietary **eyes™ imaging desktop systems**, which enable real-time PET, SPECT, optical, and CT imaging in small animals. The SPECT system (γ -eye™) offer unmatched excellence in the challenging in vivo imaging of alpha emitters (Pb-212 & Ac-225) for oncological models, in short scanning times and clinically relevant doses.

BIOEMTECH operates a fully integrated preclinical research infrastructure comprising four complementary facilities. It includes a licensed **Radiochemistry Laboratory** for radiolabelling, quality control, and radionuclide handling; an **In Vitro Laboratory** for cell-based assays, oncology model development, and cell labelling; a registered **Animal Facility** for mice and rats operating under European regulatory standards; and an advanced **In Vivo Imaging Facility**.

The radionuclides from the PRISMAP portfolio that are already approved in the Preclinical CRO Laboratories / BIOEMTECH biomedical facility are listed in Table 1. Additional radionuclides can be made available upon request.

Table 1. Radionuclides from the PRISMAP+ portfolio that can be used at the Preclinical CRO Laboratories / BIOEMTECH facility.

Radionuclide	Max. Activity, MBq	Remarks
Cu-64	20.74	Immediately available
Cu-67	39	Immediately available
Ga-67	1	Supplier to be confirmed
Pb-203	50	Immediately available
Pb-212	15	Supplier to be confirmed
Ac-225	6	Immediately available

Infrastructure and experiments available

The Preclinical CRO Laboratories / BIOEMTECH are fully equipped to conduct radiolabeling studies, cell studies, as well as animal imaging and therapy studies. The Laboratories provide a unique infrastructure and platform for preclinical studies including both in vitro and in vivo using small animals, and with the constant support of experienced project managers.

The **Animal Facility** is a registered establishment for mice and rats that operates in compliance with European and national regulations and follows the principles of the 3Rs. The facility supports animal model development, substance administration, surgery, welfare monitoring, and GLP-compliant studies, and is equipped with individually ventilated and filter-top cage systems, anaesthesia and ventilation units, physiological monitoring equipment, surgical instruments, and haematology and biochemistry analysers.

The **Radiochemistry Laboratory** is licensed to import and handle a wide range of radioisotopes and provides radiolabelling, conjugation, quality control, and stability studies. Key equipment includes Radio-TLC and Radio-HPLC systems, dose calibrators, centrifuges, and temperature-controlled preparation devices.

The **In Vitro Laboratory** performs a variety of cell-based studies, including internalisation and cytotoxicity assays, cell preparation for animal inoculation, oncology model development, and cell labelling for in vivo

monitoring. Key equipment includes Class II biological safety cabinets, CO₂ incubators, cell counter, fluorescence microscopy systems, liquid nitrogen storage, and centrifuges.

The **In Vivo Imaging Facility** offers advanced small-animal imaging services for diagnostic and therapeutic research. Equipped with BIOEMTECH's proprietary γ -eye™ (SPECT), β -eye™ (PET), and ϕ -eye™ (optical) systems, as well as g-CUBE™ (SPECT) and X-CUBE™ (CT) scanners, the facility enables dynamic and tomographic PET/SPECT imaging, CT, optical imaging, quantitative image analysis, and biodistribution and therapy monitoring studies.

Details regarding the equipment available for imaging at the Preclinical CRO Laboratories / BIOEMTECH biomedical facility can be found in Table 2.

Table 2. Imaging equipment details.

Equipment	Modality	Remarks	Animals per imaging experiment
β -eye™, BIOEMTECH	PET	Planar <i>live</i> dynamic	up to 2 mice
β -eye™- tomo, BIOEMTECH	PET	3D live imaging	up to 2 mice
γ -eye™, BIOEMTECH	SPECT	Planar <i>live</i> dynamic	up to 4 mice or 1 rat
γ -Cube™, Molecubes	SPECT	3D live imaging	up to 3 mice or 1 rat
ϕ -eye™, BIOEMTECH	Optical	Fluorescence, Bioluminescence, SWIR imaging	up to 5 mice or 1 rat
X-Cube™, Molecubes	CT		up to 3 mice or 1 rat

Animal models available

Mice (strains: NGX, BALB/c, BALB/c nude, NOD/SCID, NMRI nude, athymic nude, C57BL/6, and rats (Wistar, Sprague Dawley) available. We have several established CDX (cell line-derived xenograft) tumor models in mice, immunodeficient mice, naive rats.

Our established animal models are the following:

- Ovarian cancer (SKOV-3, ES-2)
- Bladder cancer (HT1376)
- Breast cancer (4T1, MDA-MB-231)
- Lung cancer (SHP77, A549)
- Colon cancer (HT29)
- Colorectal cancer (SW480)
- Pancreatic cancer (AR42J, BxPC-3)
- Glioblastoma (U87MG, U87MG-Luc)
- Prostate cancer (LNCaP, VCaP, PC-3, PC-3-ACP3, 22Rv1)
- FAP overexpressing lines (HEK-FAP, HT1080-FAP)
- Lung fibrosis (established evaluation platform)
- Myocardial Infarction (mice & rats)
- NAFLD (established evaluation platform)
- Arthritis (established evaluation platform)
- Crohn's disease (colon fibrosis)

These models are readily available and can be initiated immediately after the beginning of a new study. For any other cell line, the model can be easily set up with a brief pilot study, to establish the exact tumor

growth curves (for tumor models) and optimal settings. We have access to a wide range of genetically engineered mice (humanized, KO), and PDX (patient-derived xenograft) mouse models.

Support available

The support available to the users before, during and after their visit at the Preclinical CRO Laboratories / BIOEMTECH biomedical facility can be found in Table 3.

Table 3. Support available at the Preclinical CRO Laboratories / BIOEMTECH facility.

Support	Remarks
Assistance to apply for experiment permission	
Assistance with project writing	
Help/supervision during cell studies setup*	protocol setup only
Help/supervision during cell studies follow-up and results reading*	results reading only
Help/supervision with image generation and analysis	
Help with results processing and interpretation	
Help with publication writing	

The scanners and animals can be handled by trained and approved personnel only.

*We can advise the user on the protocol set up, follow-up, and the results reading. However, only trained personnel will run the experiments.

Services available

The services available at the Preclinical CRO Laboratories / BIOEMTECH biomedical facility (without the presence of the user) can be found in Table 4.

Table 4. Services available at the Preclinical CRO Laboratories / BIOEMTECH facility.

Service	Remarks
Activity measurement, dose calibrator	
Activity measurement, gamma spectrometry	
Radiolabeling according to protocol provided by the user	
Formulation of radiolabeled compound for cell incubation or animal injection	
Radiolabeling quality control TLC	
Radiolabeling quality control HPLC	
Growing cell lines available in house	
Growing cell lines provided by user	
Radiopharmaceutical stability in non-biological media	
Radiopharmaceutical stability in biological media	
Cell studies setup	
Cell studies follow up (after setting up with user)	
Animal preparation (healthy animals)	
Animal preparation (tumor-bearing animals, in house model)	
Animal preparation (tumor-bearing animals, external model)	
Animal handling (injection, scanning process, sacrifice)	
Animal handling follow-up	

