



Gabinete de Promoção do 7.º Programa-Quadro de I&DT  
**PARTNER PROFILE FORM - 7<sup>th</sup> Framework Programme**  
**Research Infrastructures - Specific Programme *Capacities***

**:: Partner Search**

**Please specify:**

- I am **looking for PARTNERS** for a project I am planning to coordinate  
 I offer my expertise to **participate as a PARTNER** in a project

**:: Contact Person**

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**:: Collaboration offered**

**Theme:** Research Infrastructures

**Activity:** Support to existing research infrastructures

**Sub-activity:** Integrating Activities

**Area:** Targeted approach: Integrating Activities to support the specific needs of thematic priority areas

**Topic:** Providing advanced support for the development of new vaccines (INFRA-2008-1.1.2.4.)

**Description of group expertise related to the topic:**

IBET is the largest private-non-profit Biotechnology Research Organisation in Portugal, acting as an interface to span the interests of both fundamental and applied research with those companies interested in using bioprocesses and in developing bioproducts. IBET has a large experience on bioreaction of animal cells both adherents (aggregates or supports) and in suspension as well as virus like particles production, purification and storage. IBET's mission is to foster the competitiveness of its customers and partners, by creating wealth out of knowledge of Chemistry, Biochemistry and Biology. IBET's targeted economic areas are pharmaceuticals and health care, agroforestry, agroindustry and the environment. Active participant of the European Research Programmes since FP3, IBET is currently involved in several projects from FP5 and FP6, namely in the areas of Life sciences, Nanotechnologies and Food Quality and Safety.

IBET operates one quarter of the 18,000 m<sup>2</sup> building of its partner institution - the "Instituto de Tecnologia Química e Biológica" (ITQB, [www.itqb.unl.pt](http://www.itqb.unl.pt)), including 16 laboratories (70 m<sup>2</sup> each) and 2 LP2 laboratories. IBET's 2 000 m<sup>2</sup> Pilot Plant for fermentation, extraction and purification processes is in a separate but contiguous building. Its modular character also enables the autonomous and independent utilisation of each operating step.

IBET's Pilot Plant has been used for processing of bacteria, yeast, and fungi as well as for virus production, including retroviruses, and animal cell technology for pharmaceutical, veterinary, agroindustrial and cosmetic industries. Its fermentation and extraction rooms are configured for biological containment (fully compliant with OECD and EU rules and directives) to allow the production and processing of genetically modified organisms. The purification rooms have implemented several chromatographic techniques from packed bed to expanded bed chromatography. All equipment is connected to a centralised control so that all the operations of the Pilot Plant can be fully documented and validated in accordance with current Good Manufacturing Practices (cGMP). At IBET, R&D projects can be expanded up to pilot plant scale working under cGMP rules for phase I/II clinical trials, for proteins, cells, virus and antibiotics. IBET has a staff of 60 highly motivated scientists and engineers, having access to a pool of 500 research scientists and highly qualified technicians in Universities and neighbouring research centres for projects requiring additional manpower.

The Animal Cell Technology Laboratory at IBET, has been very active in animal cell technology processes for biomedical applications namely vaccines (virus-like particles, bacterial, adenovirus based), adenovirus and retrovirus vectors for human gene therapy and recombinant proteins (fusion proteins and antibodies for cancer and antigens for the development of diagnostic tools). IBET's previous work has shown that the final optimization of the culture system is essentially dependent upon the specific product and affects directly its quality. Purification, quality assurance, formulation and storage are also priority areas of research in the laboratory.

Being an Institute with strong interests in vaccines, recombinant protein and gene therapy with links to a GMP facility, IBET is in a position of contributing to a network of institutions in the area of development and production, with the advantage of integrating both R&D together with up scaling of the process and expertise in methodologies such as mammalian and insect cell lines, cell immobilisation, cell bank management, metabolite quantification, microscopic techniques & morphologic analysis, fluorescence techniques, quantitative PCR, mycoplasma detection, lipid analysis, protein characterisation, virus purification & virus titration (baculovirus, adenovirus, retrovirus).

For all the above-mentioned reasons, IBET will be in a good position to work in the area of science and on the interface between science and production/application.

**Key words:** animal cell technology, vaccines, virus-like particles, viral vectors, recombinant protein, gene therapy, bioprocess development, downstream process