



### The Technology Development Laboratory

The Technology Development Laboratory (TDL) is designed to develop ideas and technologies into viable commercial proposition in a way which reduces cash-burn. It was set up by Babraham Bioscience Technologies Ltd (BBT) on the Babraham Research Campus as a place to accelerate the translation of early stage concepts in the life science and biomedical fields.

It is particularly designed to support bio-entrepreneurs at the early stage of the technology development curve; the 'proof-of-concept' stage which raises an immature technology to the level where it can form the basis of a fundable business.

#### Access to the TDL

The TDL is not a standard contract research organisation; its mission is to support early stage innovation in the biotechnology and biomedical fields. In keeping with this remit, it focuses on the needs of cash-limited companies and is flexible in its interactions and approach: the TDL can provide bench space, access to equipment and expertise to allow the client's staff to undertake the work themselves; or, alternatively, the client can take advantage of the TDL's scientific team to provide fee-based scientific development services.

#### Services performed by the TDL include:

- DNA Cloning/Mutagenesis
- Protein Expression in:
  - Bacterial or Insect Cells
  - Mammalian Cells
- Protein Purification
- Cell Culture & Transfection
- Cell Sorting & Cloning
- Cell Imaging
- Antibody Production
- Western Blot
- ELISA
- Assay Development
- Assay Screening:
  - Enzymatic-based
  - Cell-based
- Biological Chemistry
- Medicinal Chemistry
- Library Assembly
- Chemical Synthesis
- Chemical Analysis

#### Facilities and Equipment accessible via the TDL:

- Tissue culture facility
- Equipped molecular biology and biochemistry laboratory
- Access to core facilities and state-of-the-art specialised equipment of the Babraham Institute, including:
  - Confocal microscopy and cytofluorometry
  - Sequenom mass array analyser
  - Lumina *in vivo* imaging system
- Equipment for assay and screen development: \*
  - Protein expression (bacterial, mammalian and insect cell culture)
  - Protein concentration and purification (liquid chromatography)
  - Protein trafficking, expression and interaction (microscopy and imaging)
  - Protein array (array spotter)
  - HTRF (Homogeneous Time Resolved Fluorescence) assay platform

#### TDL facilities

The TDL operates from dedicated fully-equipped chemistry and biology facilities providing services and expertise across many scientific fields including molecular biology, protein biochemistry, cell biology, medicinal and synthetic chemistry. The TDL also benefits from access to the central facilities of the Babraham Institute.

#### Examples of recent projects

##### *Development of novel anti-angiogenic compounds.*

This project included the implementation of a cell-based assay for angiogenesis, and the design and synthesis of a series of compounds based on modified natural products. The screening of the compounds for anti-angiogenic properties identified several structures now protected in a Patent Application.

##### *Development of a novel cell sorting tool based on protein adhesion.*

This eleven month project included cloning of an adhesion molecule into a DNA vector, its mutation and modification in order to reduce the protein to a fifth of its original size while keeping its adhesive functions. This was followed by its expression at the surface of non-adherent mammalian cell and the exemplification of its capability to mediate cell adhesion thereby providing a mean to isolate genetically modified cells. The products and data generated from the TDL form part of the licensing package of the technology aimed at the bio-processing market.



TDL scientists also understand the requirement for strict confidentiality and the time and cost pressure of early stage innovation. Ownership of the results and associated intellectual property remains with the client. To safeguard the IP generated by the TDL, the laboratory uses patent-safe electronic laboratory books.

The TDL offers services to the general bio-community including virtual or established companies, investors, academic groups and technology transfer organisations.

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