



## **The Cell Therapy Catapult UK Preclinical Research Database as of April 2014**

The UK Preclinical Research Database covers cell therapy research projects that the Cell Therapy Catapult believes to be two or less years from the clinic. We believe that projects at this stage are sufficiently advanced to merit inclusion, in order to build a picture of the future cell therapy pipeline based on research being undertaken in the UK.

The database has been compiled and verified by the Cell Therapy Catapult team, and includes:

- academic research in UK universities
- commercial research projects ongoing in the UK, where such information has been supplied to the Cell Therapy Catapult for the database, regardless of the nationality of the sponsor
- projects aimed at developing a therapeutic, rather than platform projects

It is updated annually, or more often if required. Its accuracy and comprehensiveness relies as much on the input of the cell therapy community as that of the Cell Therapy Catapult, and we welcome your updates, additions and corrections, which you can send to us [here](#). We acknowledge that the vast majority of respondents are universities, and we welcome further additions from them, as well as hospitals and commercial sponsors.

### **The purpose of the Cell Therapy Catapult UK Preclinical Research Database**

As a centre of translational excellence in the UK, the Cell Therapy Catapult is progressing a portfolio of projects with the UK and international community. The UK Preclinical Research Database gives us a valuable mechanism for tracking cell therapy trends and enables us to plan activities appropriately. It complements and leads into our UK Clinical Trials Database.

The Cell Therapy Catapult hopes that the database will be of use to academics, researchers and commercial organisations operating in the cell therapy space by allowing them to appreciate both the rich science base in the UK and future directions of cell therapy activity.

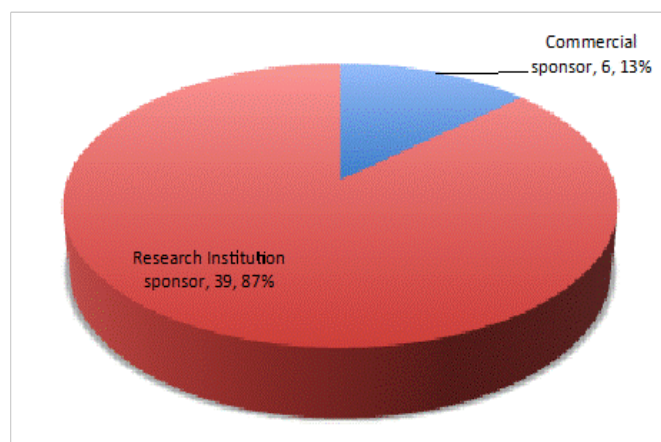
The interesting trends the database highlights are discussed below.

## UK Cell Therapy Preclinical Research Database - commentary on key findings

There are 45 verified cell therapy projects in late preclinical research (two or less years from the clinic) in the UK, 8 more than the 37 identified in the 2013 analysis, according to the findings of the Cell Therapy Catapult database.

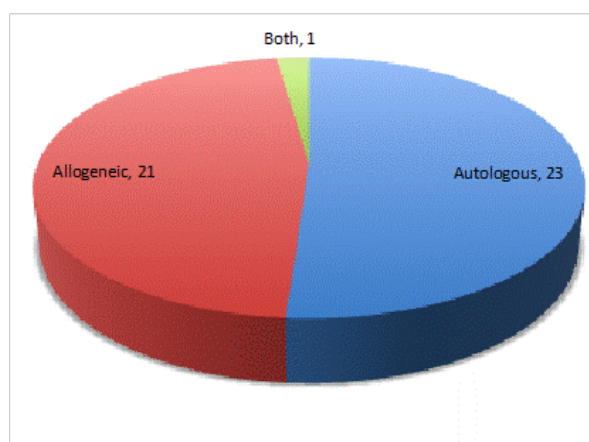
It is encouraging to see that seven of the projects identified in the 2013 database have moved into our UK Clinical Trials Database along the timeline anticipated, while the clinical trial start dates of three others have been delayed.

*Majority (87%) of projects are sponsored by a research institution*



Although the entrance of some commercially sponsored projects has increased their proportion in the database to 13% from 2013's 8%, research institutions still dominate as is to be expected for this early stage of research.

*Autologous and allogeneic cell types are represented approximately equally*



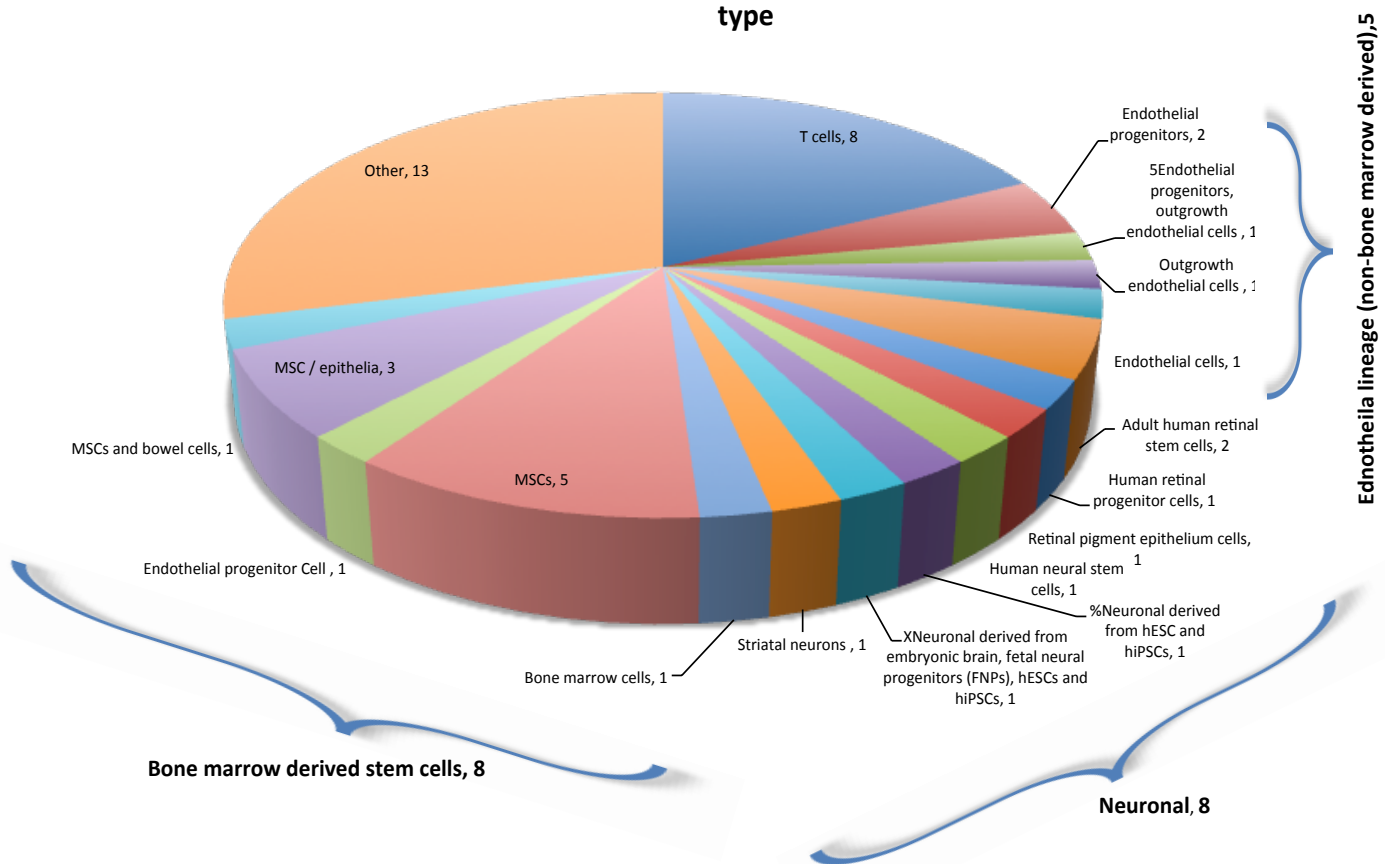
A 1:1 ratio of allogeneic to autologous cells was also observed in the 2013 database.

*A diverse range of cell types is approaching the clinic*

As the diagram below shows, there are diverse cell types approaching the clinic, with T cells (8 projects), bone marrow-derived stem cells (8) and neuronal cells (8) the largest single categories. Compared with 2013, projects based on neuronal cells and cells of endothelial lineage have increased markedly, from 1 to 5 and from 5 to 8 in 2014 respectively.

*T cell, bone marrow-derived and neuronal cells are the categories that dominate*

**April 2014-Preclinical projects (<2 years from clinic) in the UK split by cell type**

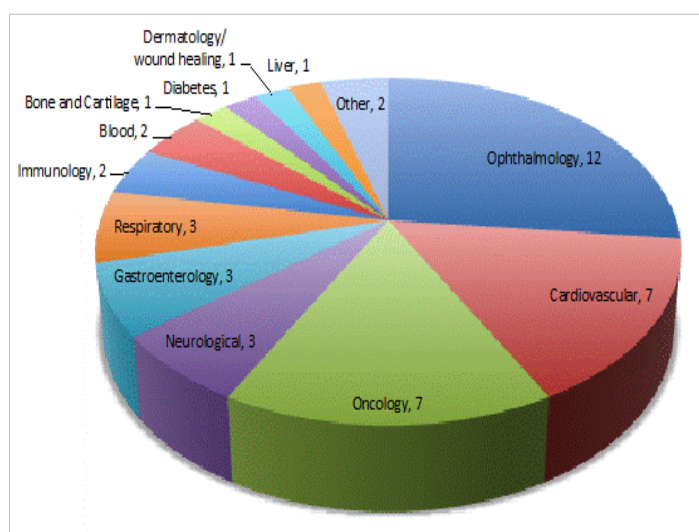


Cell types in the 'Other' category: Corneal plus scaffold, adult epithelial, corneal, pericyte & cardiac progenitor cells, NK Cells, MSC/epithelia from muscle/buccal mucosa biopsies, endogenous adrenocortical stem cells, red blood cells, platelet & megakaryocytes, brown adipose, keratinocyte stem cells, otic & amniotic fluid stem cells.

### *Significant activity in ophthalmology, oncology and cardiovascular indications*

The studies in the preclinical database cover a diverse range of indications, with ophthalmology dominant (12 projects), followed by oncology and cardiovascular (seven each). Compared with 2013, the number of projects focusing on ophthalmology has increased markedly, from five to 12.

#### *Disease areas represented by projects in the preclinical database*



*Projects in the 'Other' category are: one project involving the banking of amniotic fluid stem cells and one involving otic cells for deafness*

### *UK Cell Therapy Preclinical Research Database - conclusions*

In its Preclinical Research Database, the Cell Therapy Catapult has identified a rich pipeline of therapies in the UK which are likely to enter clinical development over the next two years. Many of the trends reflected therein - a dominance of research institution sponsors, a strong focus on oncology and on T cells - are also seen in the Clinical Trials Database. While it is early to be drawing definitive conclusions from trends seen in the Preclinical Database, and bearing in mind the inherently speculative nature of the projects therein, it is encouraging to see a year-on-year increase in their numbers.

An important and increasing additional source of therapies entering the clinic in the UK is overseas sponsors, where the UK is selected to conduct the clinical trial based on its NHS clinical trial infrastructure. These projects are not represented currently in the preclinical research database but are included in the clinical trials database once trials are ongoing. **April 2014**