The global pipeline of cell therapies for cancer

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Supplementary information

Dataset and analysis
The data on cell therapies were collected from GlobalData and subsequently curated by Cancer Research Institute (CRI) based on CRI IO Analytics definition of different cell therapy types and drug target information. Cell therapies were classified into seven categories based on the different mechanisms of action: CAR T, T cell receptor (TCR) T, autologous circulating T cells targeting an unspecified tumour-associated antigen (TAA) or a tumour-specific antigen (TSA), tumour-infiltrating T cells (TIL), T cell therapies based on new technologies (such as induced pluripotent stem cells (iPSCs), CRISPR or γδT cells), cell therapies derived from natural killer (NK) or NKT cells, and therapies derived from other cell types (other cell therapy, such as macrophages or stem cells). Those cell therapies that qualify as cancer vaccines owing to their mechanism of action were excluded. The clinical trial data were sourced from ClinicalTrials.gov and were subsequently analysed and consolidated with the drug pipeline data. The data extraction was done in March 2019, and the analyses were done by using PostgreSQL and Tableau.
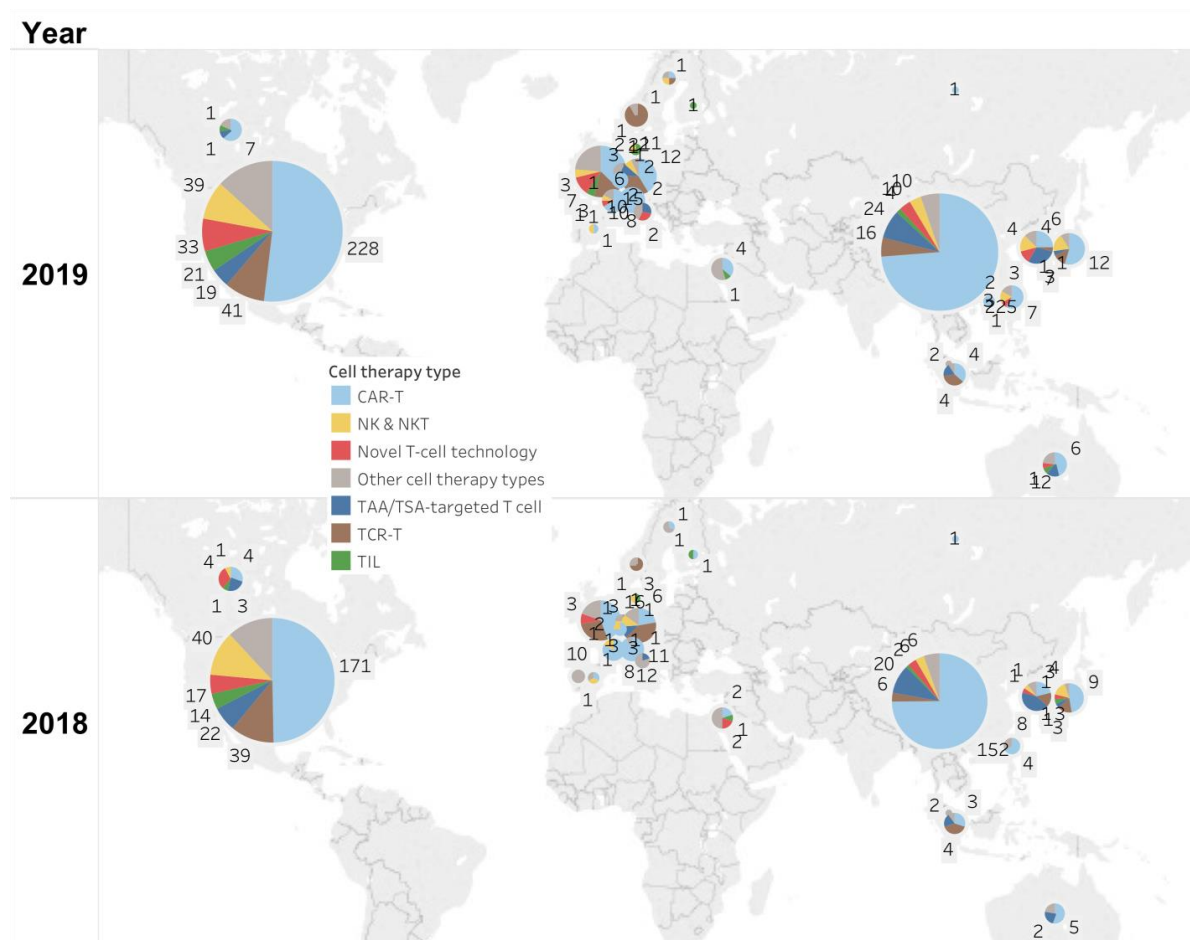
Supplementary Figure 1 | **Geographic distribution of cancer cell therapies in development in 2019 and 2018**. The United States and China lead the field, and CAR-T is the most popular platform. Source: CRI IO Analytics and GlobalData.
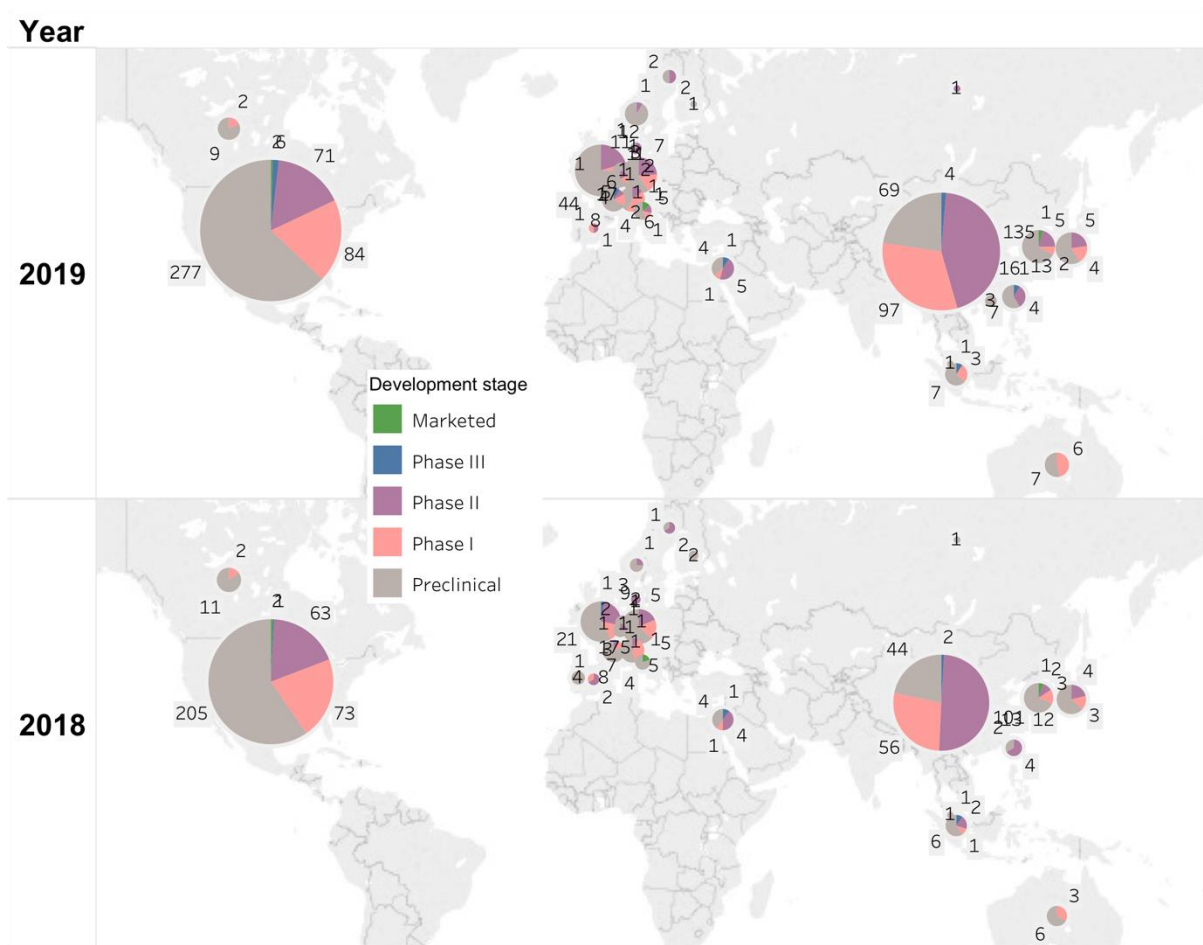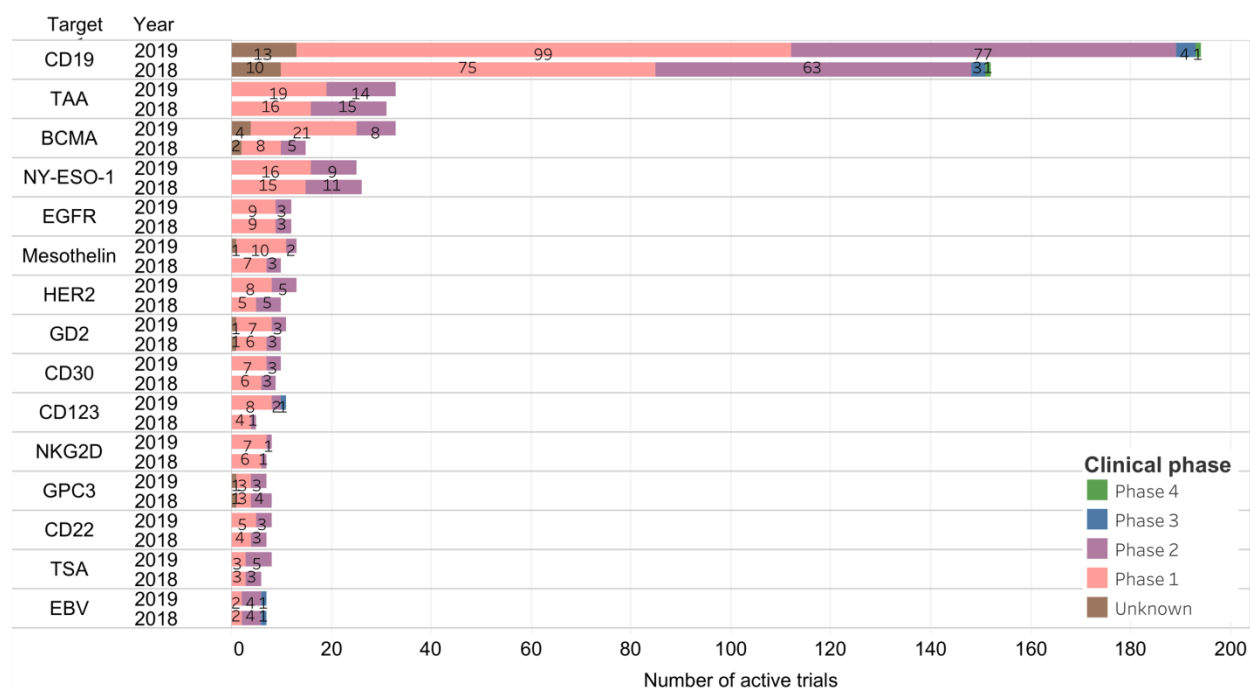
Supplementary Figure 2 | **Comparison of cancer cell therapy pipelines in 2019 and 2018 by clinical stages**. Source: CRI IO Analytics and GlobalData.
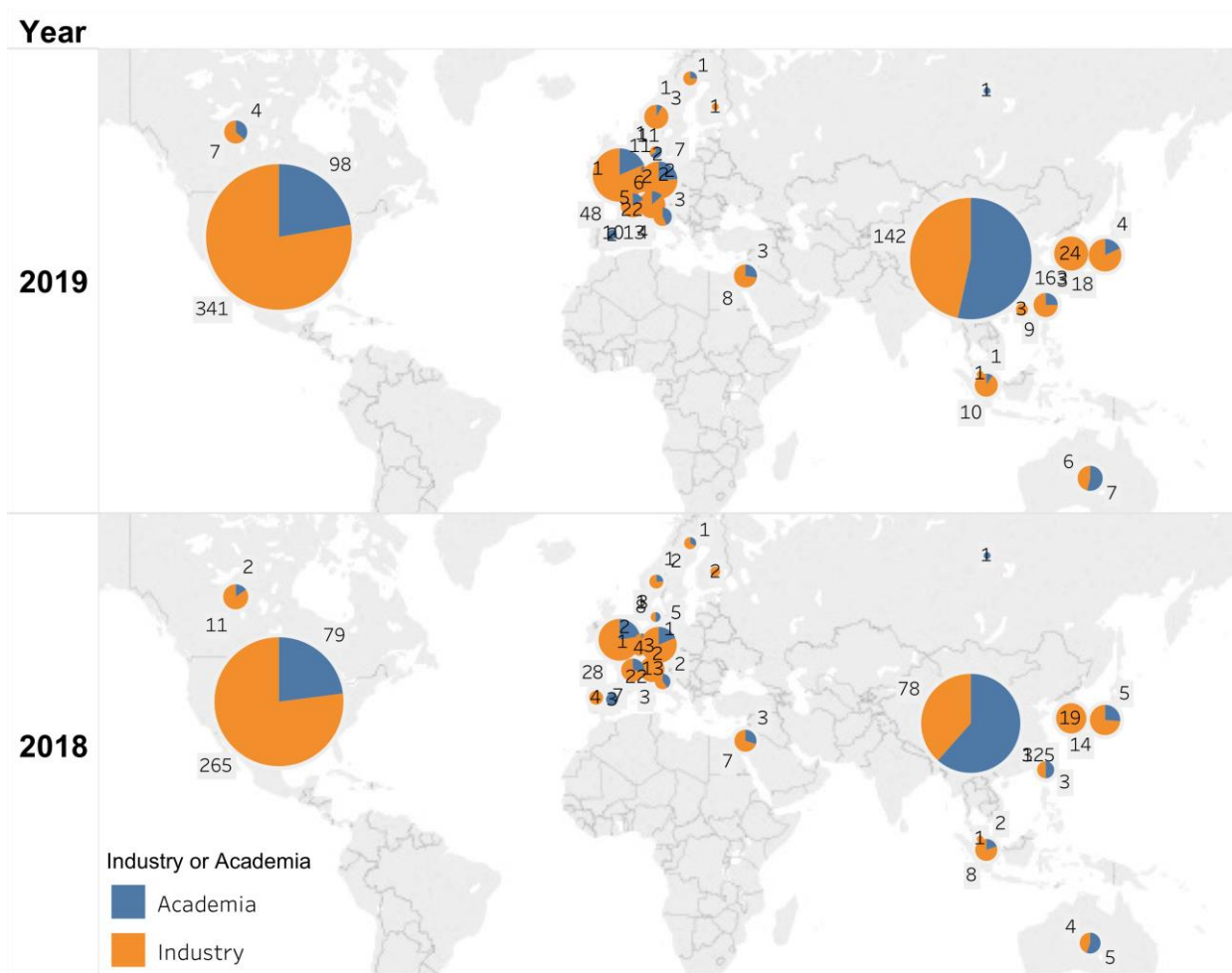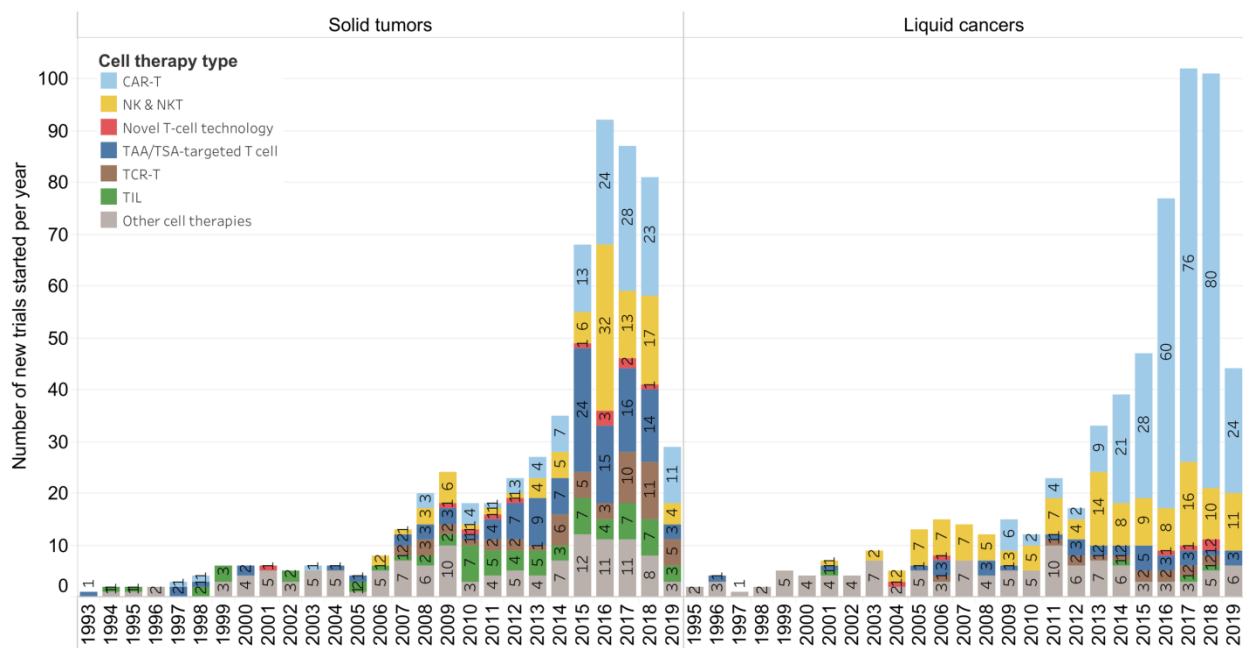
Supplementary Figure 3 | **Comparison of cancer cell therapy pipelines of 2019 and 2018 by ownership type**. Source: CRI IO Analytics and GlobalData.
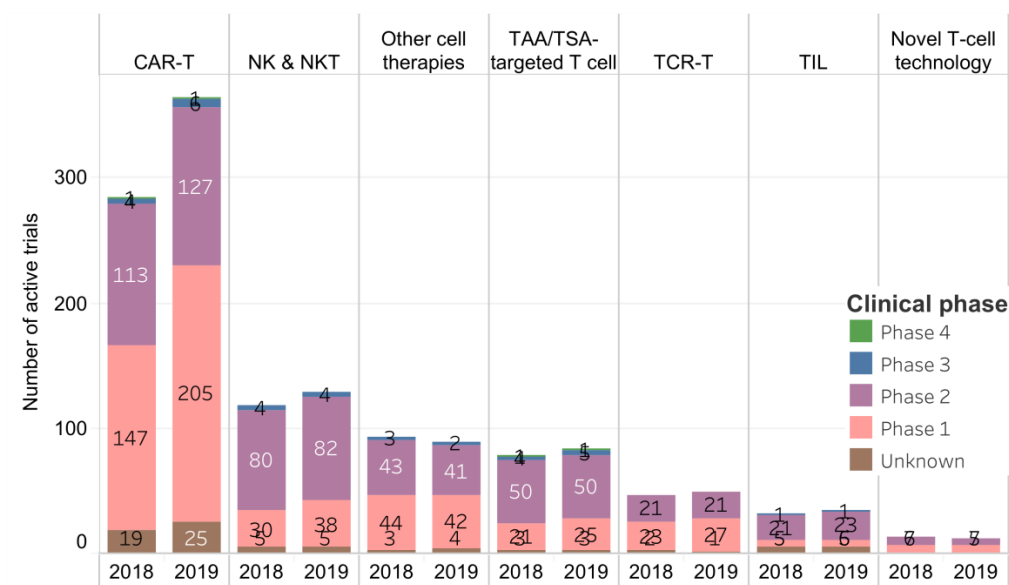
Supplementary Figure 4 | **Comparison of the landscape of active trials of cancer cell therapies based on different platforms between 2019 and 2018.** Source: ClinicalTrials.gov and CRI IO Analytics.

Supplementary Figure 5 | **Comparison of top 15 targets measured by the number of active cell therapy trials between 2019 and 2018**. Source: ClinicalTrials.gov and CRI IO Analytics.
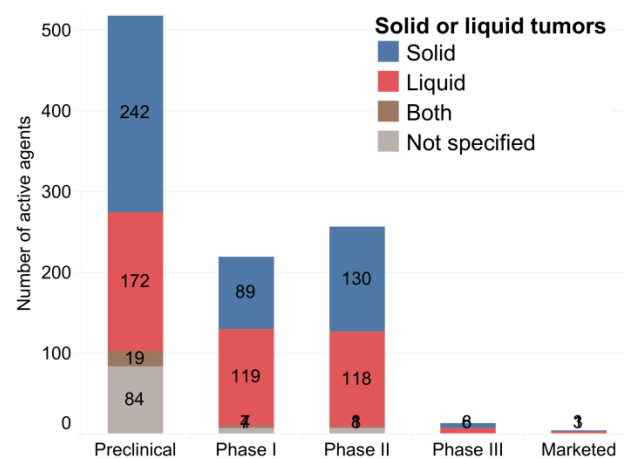
Supplementary Figure 6 | **Comparison of cell therapy trials for solid tumours and blood cancers.** Since 1993, 596 trials have been opened for cell therapies targeting solid tumours, while 607 have opened for blood cancers. Source: ClinicalTrials.gov.

Supplementary Table 1 | **Summary of 596 solid tumour trials by indication**

Cancer type	Active trials	Inactive trials	Grand Total
Melanoma	26	53	79
Brain and CNS Cancer	45	30	75
Mutiple Solid Tumor Types #	45	24	69
Liver Cancer	33	24	57
Unspecified Cancer Types &	13	21	34
Colorectal Cancer	20	13	33
Gastrointestinal Cancers	20	12	32
Breast Cancer	13	13	26
Head and Neck Cancers	12	12	24
Pancreatic Cancer	16	7	23
Kidney Cancer	9	13	22
NSCLC	16	5	21
Ovarian Cancer	12	7	19
Lung Cancer	12	6	18
Sarcomas	14	3	17
Prostate Cancer	10	5	15
Gynecological Cancers	10	3	13
Cervical Cancer	7		7
Mesothelioma	5	1	6
Skin Cancer	3		3
Bladder Cancer	2	1	3

Note: # These trials test two or more solid tumor types. & These trials either test tumors positive with certain biomarker such as HER2+, test any advanced solid tumors, or do not have information about tumor types.

Source: CRI IO analytics, Clinicaltrials.gov and GlobalData.

Supplementary Figure 7 | **Comparison of the number of active cell therapy agents for either solid tumors or haematological cancers in the current pipeline, by their highest development stage**. Source: CRI IO analytics, ClinicalTrials.gov and GlobalData.