Databases at the Trust

Drugs, trials and more

Pan Pantziarka

LFS UK 2025

Supporting LFS families, promoting research, building community

Saturday 13th September, 10am -5pm

International Student House, 229 Great Portland Street, London, W1B 1PF

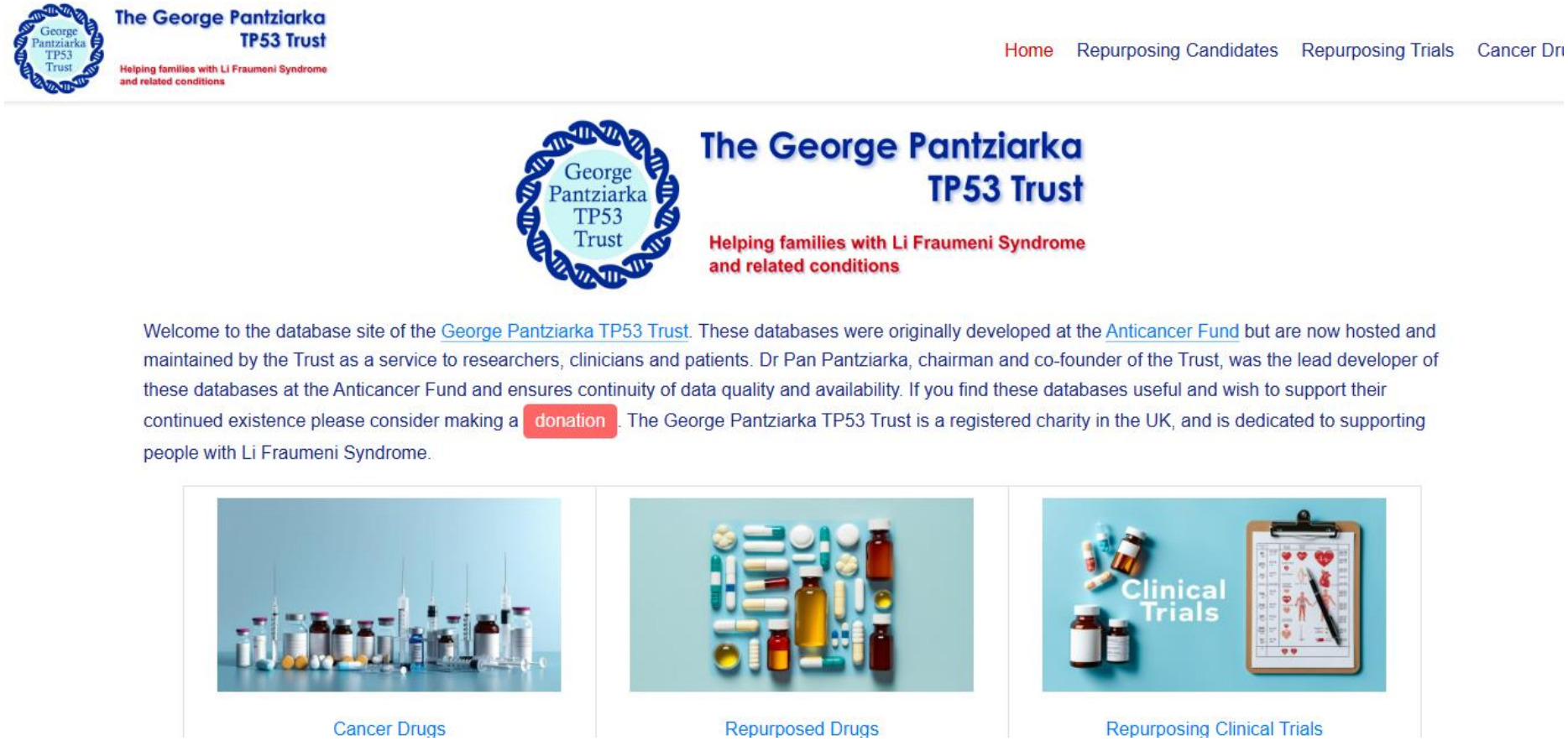
Our website…

- Geared around providing information to people with LFS
- Articles, blog posts, links
- Supplemented with our social media presence – Facebook, X, LinkedIn and Instagram
- Very text based – not designed to provide structured technical data

www.tp53.org.uk or www.tp53.co.uk

Introducing our data.tp53 domain

A companion website structured for data: data.tp53.org.uk



Generously supported by the Addie Brady Foundation

Cancer Drugs database

- There is no standalone database that lists all the licensed cancer drugs – whether approved in the UK, US, Europe or the rest of the world
- Many drug databases mix cancer and non-cancer drugs, experimental and abandoned drugs and drugs used for cancer symptoms but not cancer itself
- Having a central list of drugs is useful for patients and for researchers – especially those developing AI tools and bioinformatic pipelines
- Based on this finding the Anticancer Fund developed the cancer drugs database
- Recently a change of direction at the Anticancer Fund meant that the databases were no longer in scope – at which point the George Pantziarka TP53 Trust stepped in to take then over

What information does it contain?

- For each drug:
  - Where it is approved
  - When it was approved
  - What cancers it's approved for
  - What the molecular targets are
  - Chemical identifiers/codes
- User can search by:
  - Drug name
  - Cancer name
  - Molecular target
  - Year of approval

Summary results as of last build on: 23/06/25	Number	Percentage
Number of licensed anticancer drugs	330	
FDA approved anticancer drugs	298	90.30%
EMA approved anticancer drugs	221	66.97%
Euro nationally approved anticancer drugs	50	15.15%
Non-FDA/EMA/European	11	3.33%
Drugs included in WHO EML	54	16.36%
Single API drugs	326	98.79%
Combination (>1 API) drugs	4	1.21%

Keeping the database current

- New cancer drugs are arriving continuously – this is great news, but it means keeping the database updated is a challenge
- Finding which cancer a drug is approved for is not always straightforward - the data is often buried in the drug label
- Drugs can also have approval revoked – so the risk is that the database might contain inaccurate information
- Database maintenance is an on-going task that we are undertaking
- Plan to supplement with more patient-friendly info – for example side effects for each drug

Repurposing drugs database

- Drug repurposing takes drugs used for one disease to treat a new disease – aspirin was a pain killer, now used for heart disease
- Metformin – type II diabetes now, hopefully cancer prevention in LFS in the future
- Lots of non-cancer drugs target biological pathways that are used by cancers
- Some repurposed drugs are already used in cancer: thalidomide now a standard treatment for multiple myeloma, sirolimus for organ transplant rejection now used in soft tissue sarcoma
- At the Anticancer Fund we developed the first and most widely used database of repurposing candidates - now moved to the Trust

What information does it contain?

	Number	Percentage		Number	Percentage
Total number of drugs included in ReDO database	372	100.0%	Drugs with observational studies	57	15.3%
Drugs included in WHO EML	118	31.7%	Drugs with clinical trials	244	65.6%
Drugs which are off-patent	324	87.1%	Trials with published reports	162	66.4%
Drugs with in vitro evidence	361	97.0%	Drugs for which human data exists	267	71.8%
Drugs with in vivo evidence	343	92.2%	WHO + Off-patent + Human data	84	22.6%
Drugs with case(s) reports	112	30.1%	Number of unique molecular targets	1156	-

- For each drug:
  - Name and aliases
  - Original use
  - Type of data showing anticancer uses (test tube, animals, human data)
  - Molecular targets
  - Links to chemical databases
  - Patent status
  - Availability (inclusion on Essential Medicines List)

Keeping the database current

- Requires constant scanning of the scientific literature to identify new non-cancer drugs with evidence of anticancer effects
- Also need to remove drugs once they are approved for treating cancer – DFMO (used for African sleeping sickness) now approved for neuroblastoma
- New candidates need to be assessed to strict criteria before they are included

Repurposing clinical trials database

- Finding clinical trials investigating repurposed drugs as cancer treatments is not easy – lots of these drugs are used to treat symptoms or they are exclusion criteria for trials
- Huge levels of interest in repurposing – both with patients and within health systems and regulators, including FDA, EMA and MHRA
- Using the repurposing drugs database as input, the repurposing clinical trials database looks at active trials across the world that are investigating these drugs as **treatments**

What information does it contain?

Summary results as of last data import on: 23/07/2025	
Number of included repurposing trials	970
Number of ReDO drugs included in trials	191
Number of patients planned for inclusion in trials	145899
Number of countries with Principal Investigator of trial	45

Most popular drugs in trials as of last data import on: 23/07/2025			
Metformin	127	Celecoxib	63
Hydroxychloroquine	44	Acetylsalicylic Acid	40
Ascorbic acid	35	Propofol	32
Propranolol	31	Selumetinib	31
Valproic Acid	29	Zoledronic Acid	25
Simvastatin	25	Sirolimus	22

- User friendly search/filtering by:
  - Cancer type
  - Inclusion of pediatric patients
  - Drug name
  - Trial ID
- Each trial record links to full trial registration record

Keeping the database current

- Already semi-automated – data is extracted from clinical trial registries using code
- Manual screening still required to check the scope of each trial
- An on-going process
- Further automation being investigated as we maintain the database

Why are we doing this?

- Data is critical to modern medicine and research – we're providing data sources that helps the wider research community
- We want data to be open and accessible to all – not locked behind paywalls and subscriptions
- Knowledge is power – we're providing data useful to cancer patients
- We're now looking at developing the first database of *cancer prevention trials*

Measuring impact

frontiers in Pharmacology

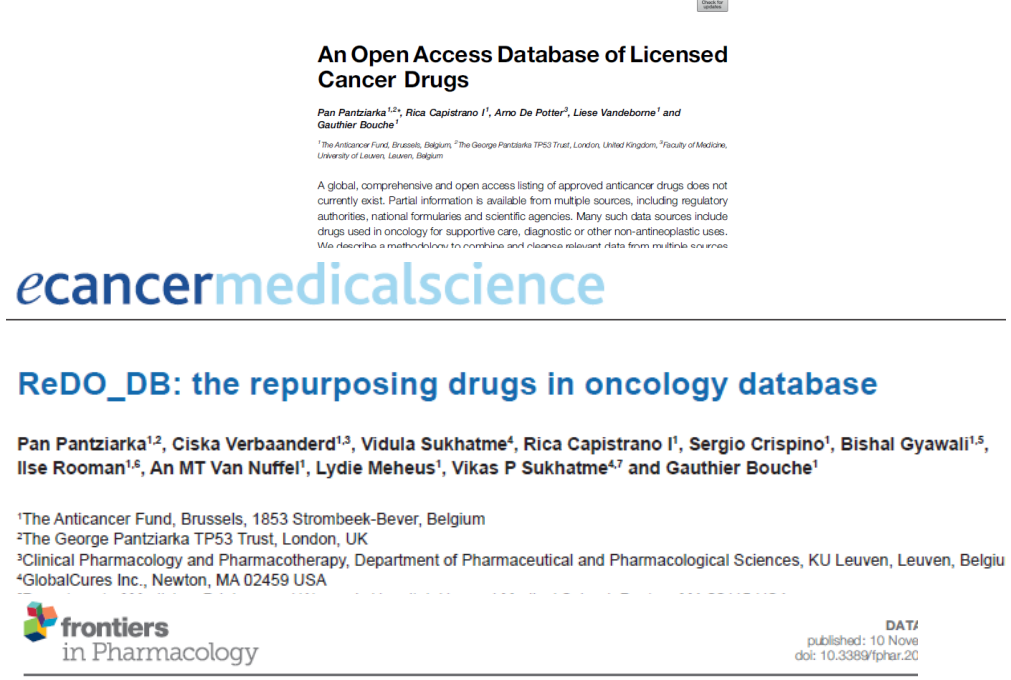
DATA REPORT
published: 11 March 2021
doi: 10.3389/fphar.2021.627574

An Open Access Database of Licensed Cancer Drugs

Pan Pantziarka[1,2]*, Rica Capistrano I[1], Arno De Potter[3], Liese Vandeborne[1] and Gauthier Bouche[1]

[1]The Anticancer Fund, Brussels, Belgium, [2]The George Pantziarka TP53 Trust, London, United Kingdom, [3]Faculty of Medicine, University of Leuven, Leuven, Belgium

A global, comprehensive and open access listing of approved anticancer drugs does not currently exist. Partial information is available from multiple sources, including regulatory authorities, national formularies and scientific agencies. Many such data sources include drugs used in oncology for supportive care, diagnostic or other non-antineoplastic uses.



ecancermedicalscience

ReDO_DB: the repurposing drugs in oncology database

Pan Pantziarka[1,2], Ciska Verbaanderd[1,3], Vidula Sukhatme[4], Rica Capistrano I[1], Sergio Crispino[1], Bishal Gyawali[1,5], Ilse Rooman[1,6], An MT Van Nuffel[1], Lydie Meheus[1], Vikas P Sukhatme[4,7] and Gauthier Bouche[1]

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frontiers in Pharmacology

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A Database of Drug Repurposing Clinical Trials in Oncology

Pan Pantziarka[1,2]*, Liese Vandeborne[1] and Gauthier Bouche[1]

[1]The Anticancer Fund, Brussels, Belgium, [2]The George Pantziarka TP53 Trust, London, United Kingdom

- These papers have been referenced by more than 200 other papers
- They continue to get new references, including papers in high impact journals
- The databases are being used by multiple research groups in their research
- Cancer drugs database used by an app for cancer patients
- Clinical trials databases used by patients to find trials to share with their oncologists
- AI and bioinformatics tools are using the databases as curated (trusted) data sources

And the website?

New website on the way in 2026