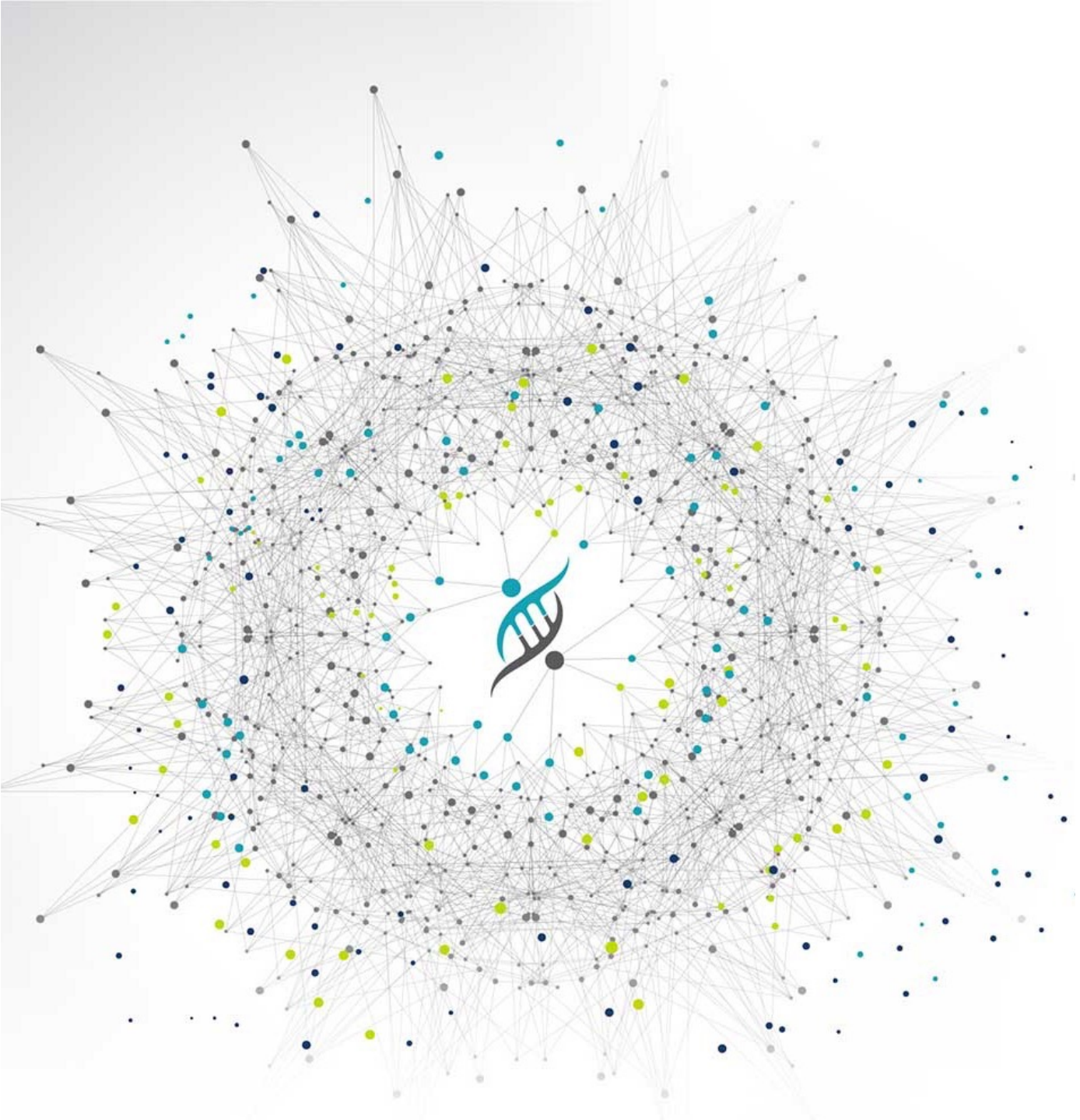

MolecularMatch

CLINICAL INTELLIGENCE **ON-DEMAND**

Improving Molecular-Based Clinical Trial Search

www.molecularmatch.com

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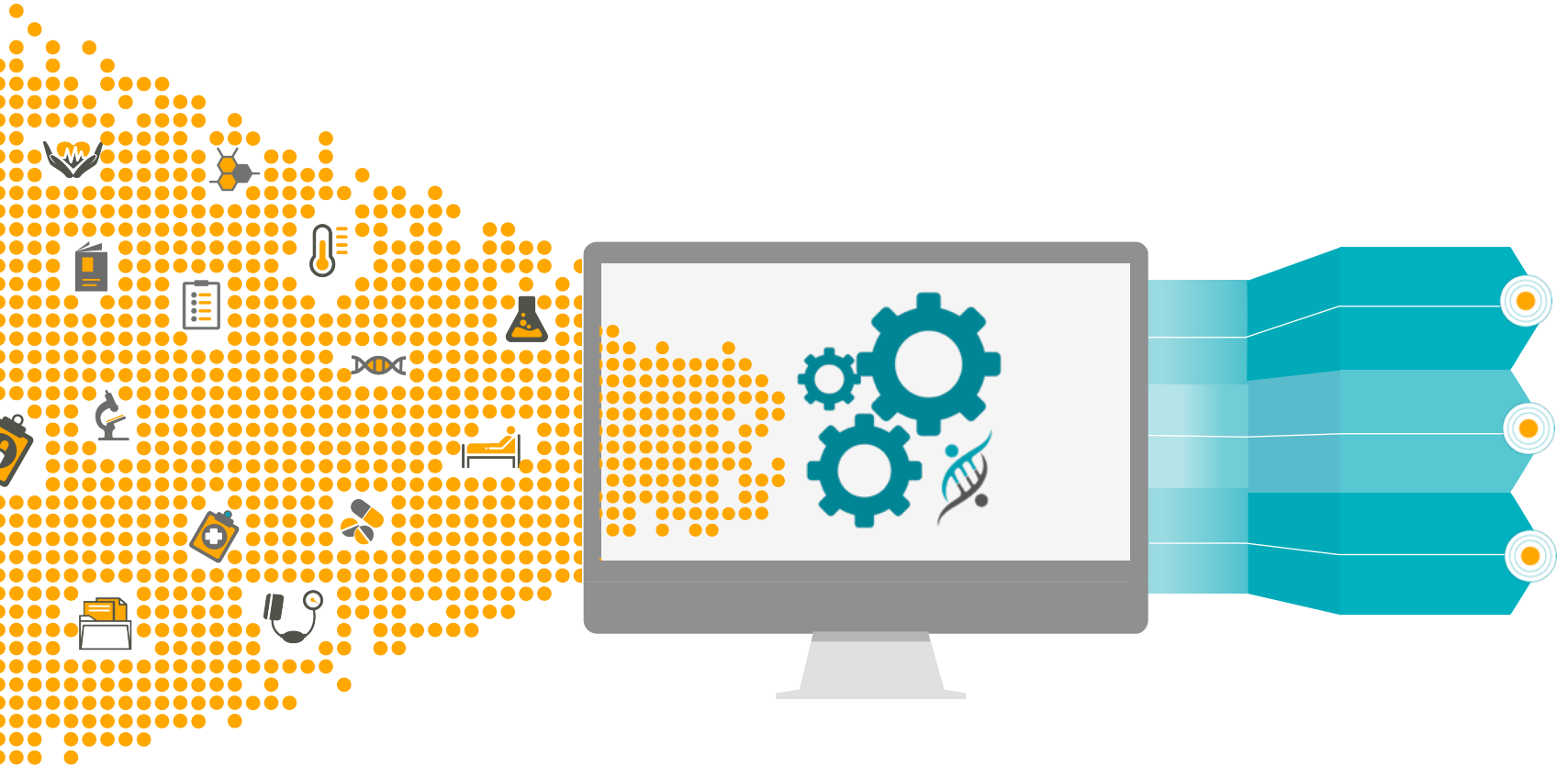
MolecularMatch Products



Targeted Therapeutic and Immunotherapy Guidance

Geolocated Clinical Trial Matching

Publication/Literature Search

Trial Matching Pain Points

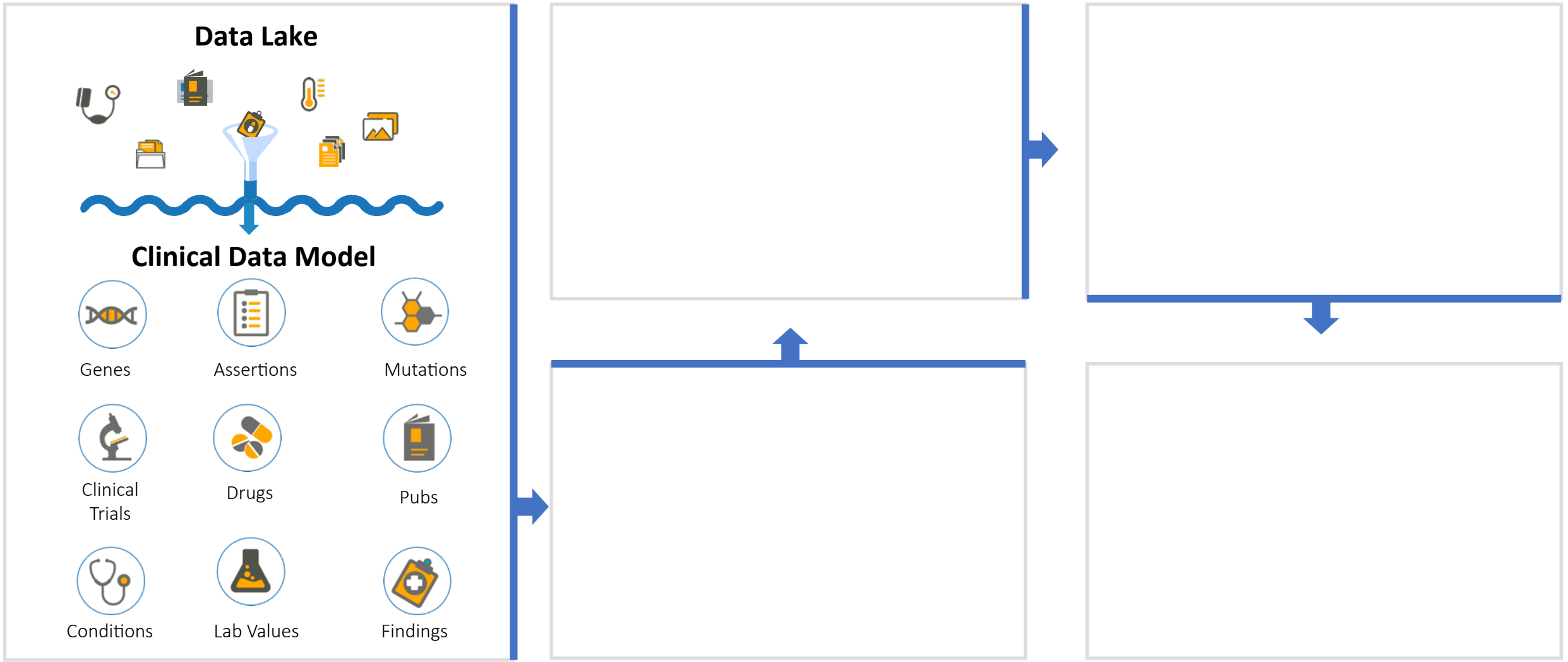
Problem #1 – Users' search terms can match anywhere in the trial record, leading to lists of trials where search terms are found in the exclusion criteria.

How do we efficiently prioritize relevant trials and eliminate long lists of irrelevant trials?

Problem #2 – Many trials do not specify molecular biomarkers as inclusion criteria, even when targeted drugs are part of the trial intervention.

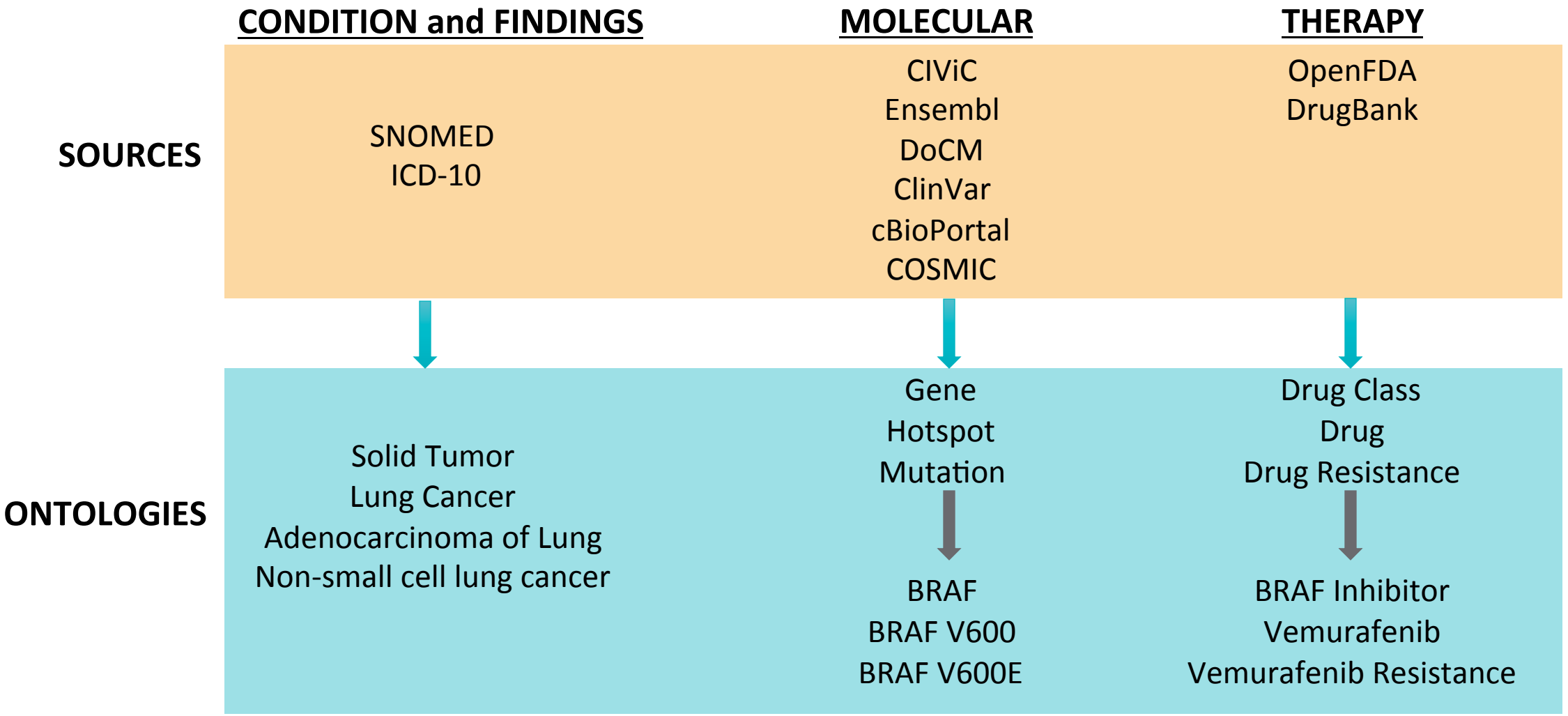
How do we improve matching of molecular patient profiles to these non-molecular trials?

MolecularMatch Platform

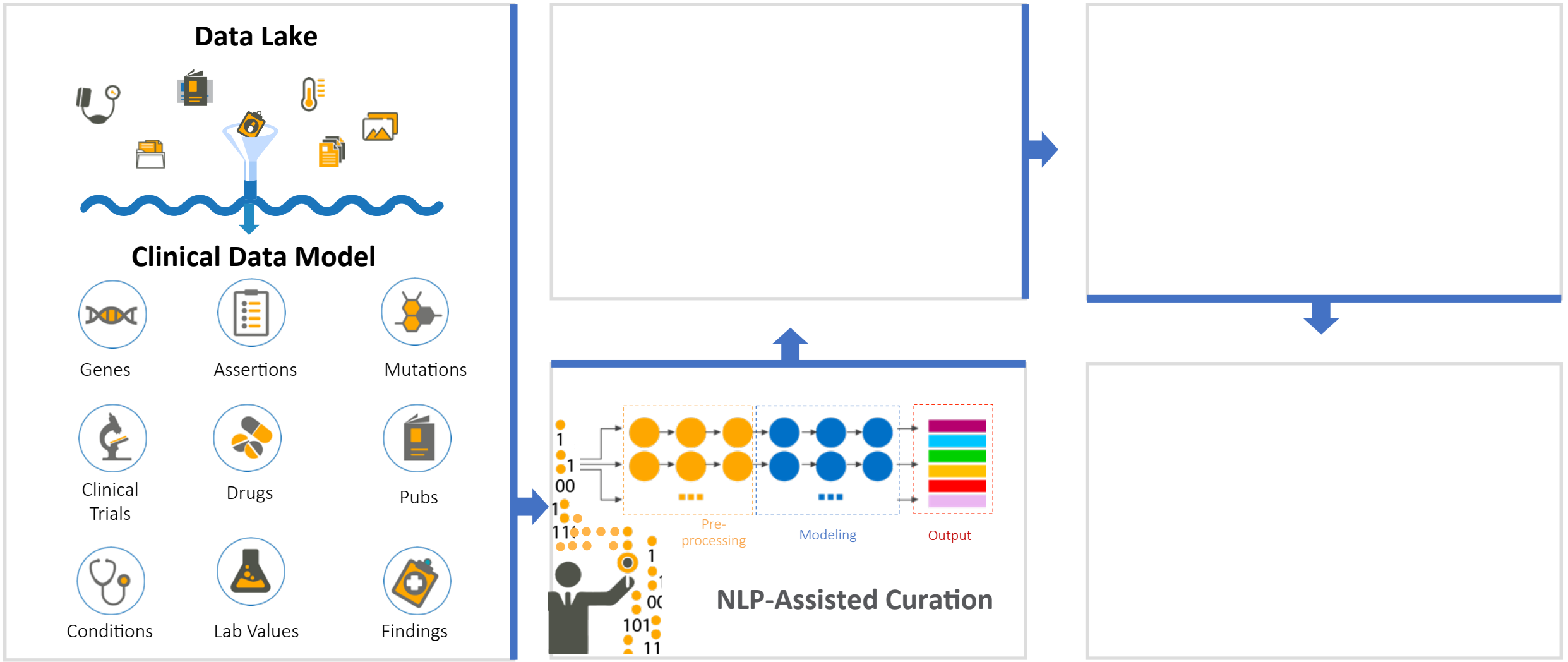


Data Sources and Ontologies

Data relationships

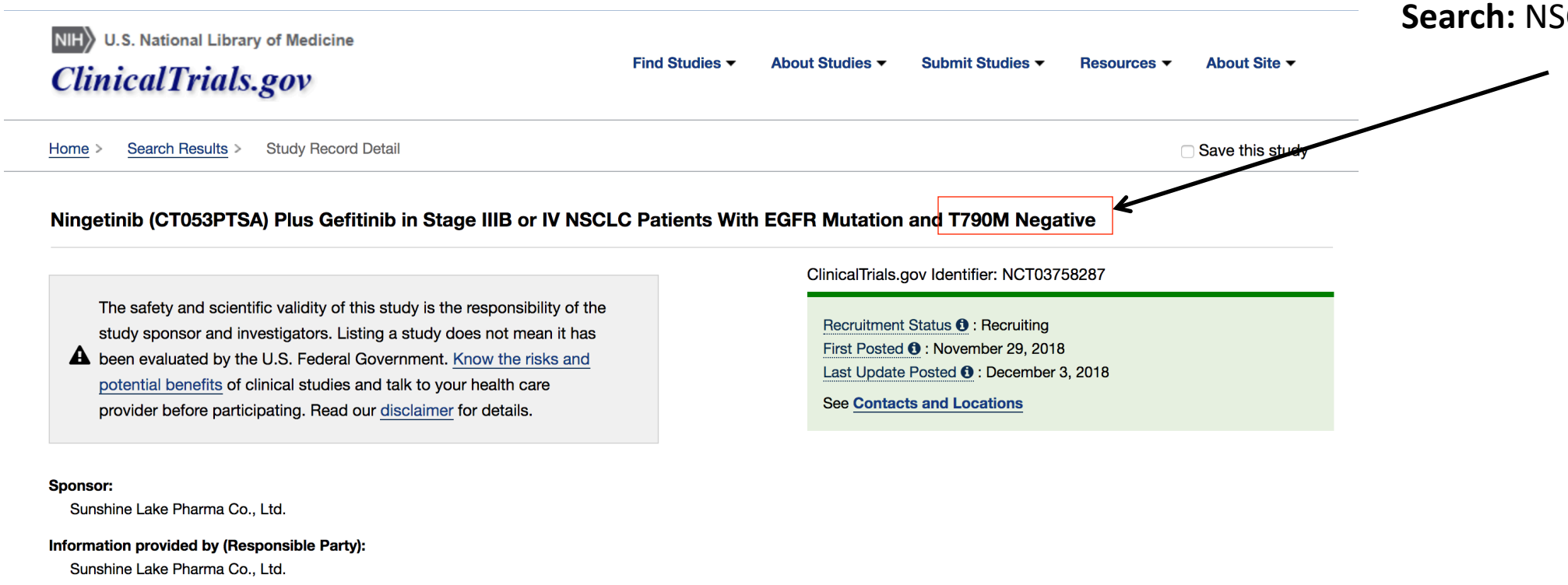


MolecularMatch Platform



Distinguishing Eligibility Criteria

Search: NSCLC EGFR T790M



Distinguishing Eligibility Criteria

Criteria

Inclusion Criteria:

- Histologically or cytologically confirmed Stage IIIB or IV NSCLC
- Acquired resistance to EGFR TKI (1st, 2nd or 3rd generation)
- Histological or cytological evidence of EGFR mutation and T790M negative after progression on last EGFR TKI therapy
- Measurable disease according to Response Evaluation Criteria in Solid Tumors version 1.1 (RECIST 1.1)
- Toxicity recovered to NCI CTCAE v.4.03 Grade ≤1 from previous treatments (except alopecia)
- ECOG performance status (PS) 0 or 1
- Life expectancy of ≥ 12 weeks
- Adequate organ function

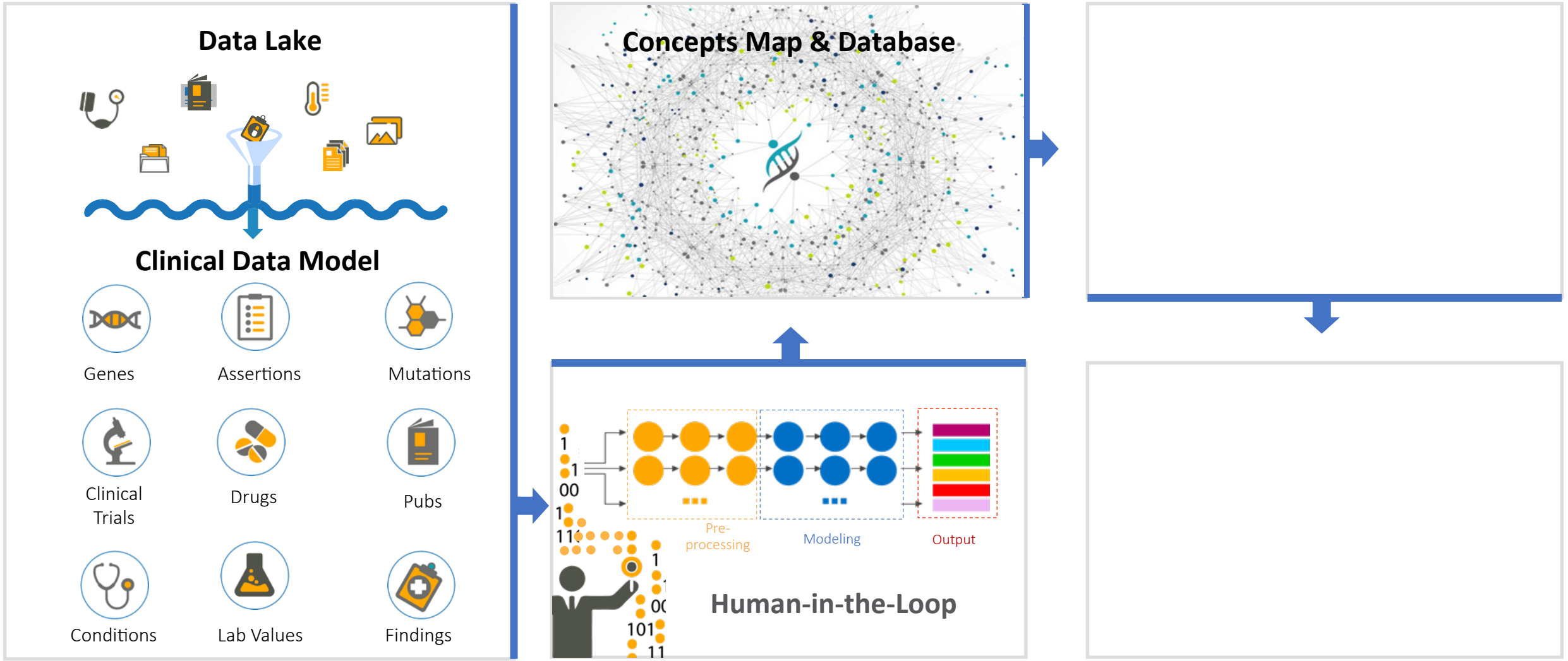
Exclusion Criteria:

- Prior treatments
  - Chemotherapy, targeted therapy (except EGFR TKI), immunotherapy, radiotherapy, or major surgery within 4 weeks prior to study treatment
  - Nitrosourea and mitomycin chemotherapy within 6 weeks prior to study treatment
  - EGFR TKI treatment within 2 weeks prior to study treatment
  - Had received live vaccine within 4 weeks prior to study treatment
  - Had received any investigational agent from other clinical study within 4 weeks prior to study treatment or are currently participating in other clinical trials
  - Previous treatment with any other c-MET inhibitor or Axl inhibitor (eg, crizotinib, cabozantinib, volitinib, INC280)
- Symptomatic, untreated or unstable central nervous system metastases

Include:
Erlotinib resistance
Afatinib resistance
Gefitinib resistance
Etc.

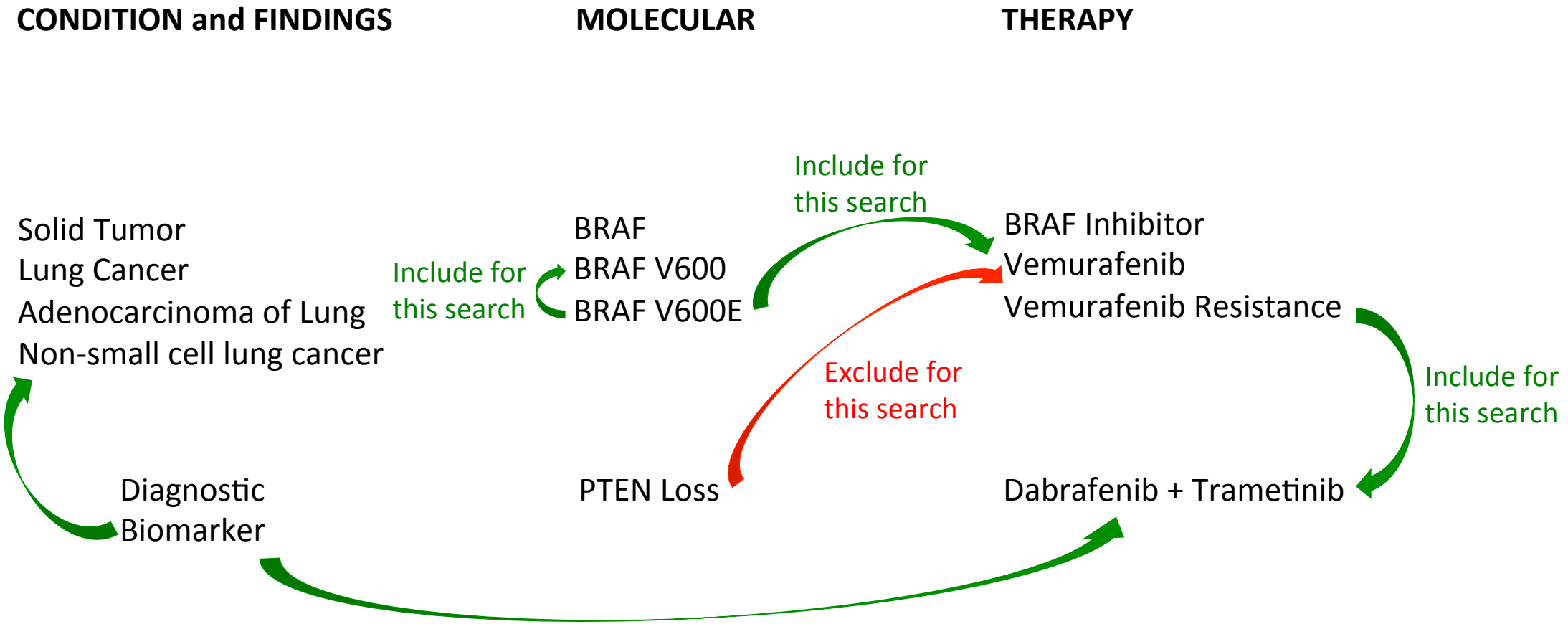
Exclude:
Crizotinib resistance
Cabozantinib resistance
Volitinib resistance
Etc.

MolecularMatch Platform



Concept Association and Inference

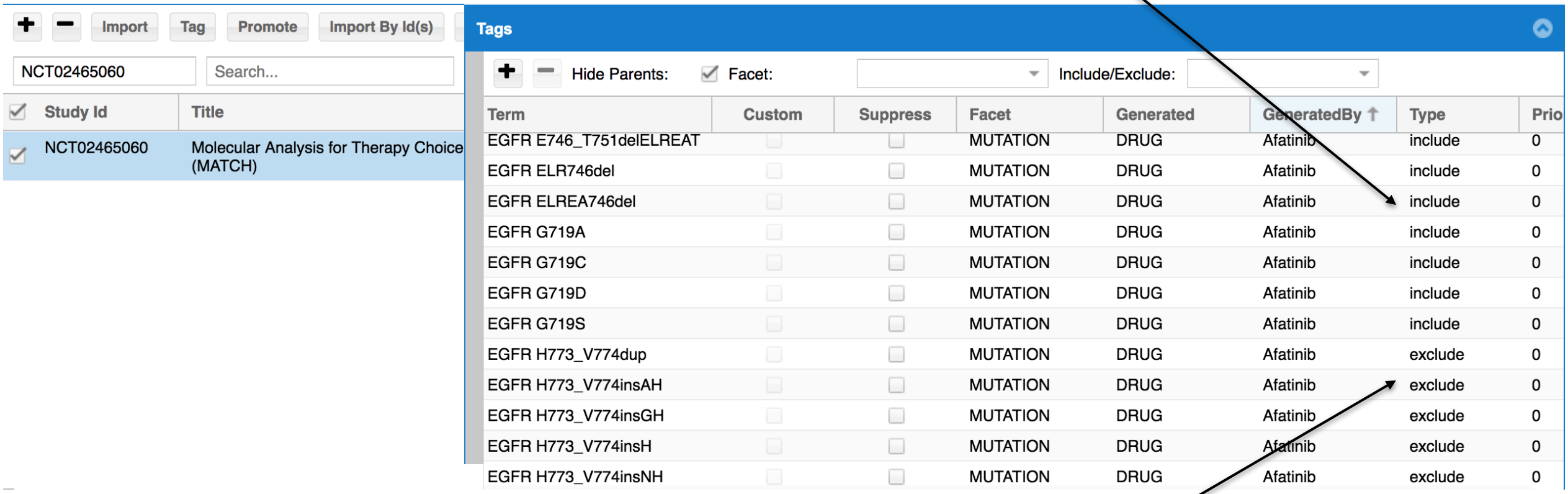
Connecting the data



Concept Association and Inference

Molecular association with drug sensitivity

Include variants that confer sensitivity to drug

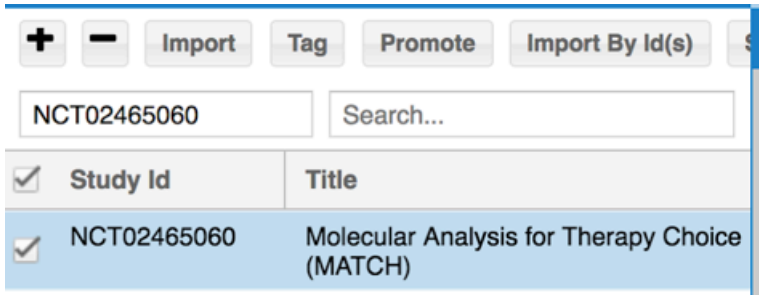


Exclude variants that confer resistance to drug

Concept Association and Inference

Expansion of relevant pathway mutations to therapy

Palbociclib infers genes and variants within CDK4/6 pathway

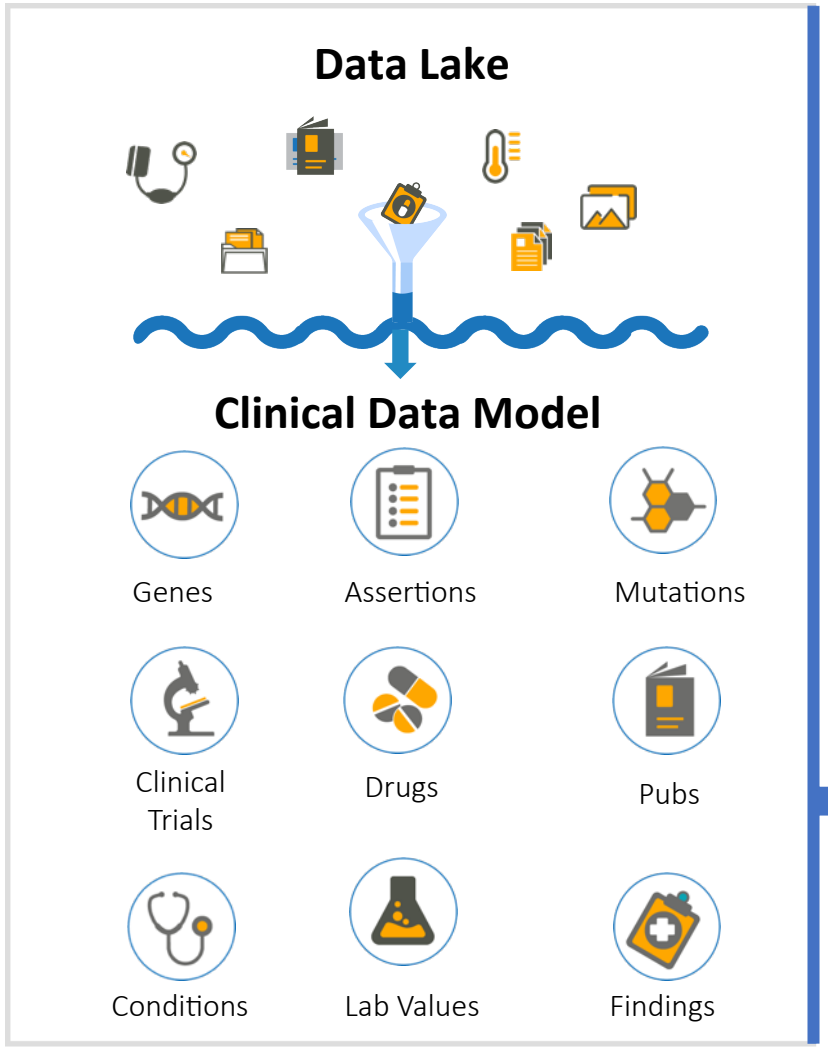


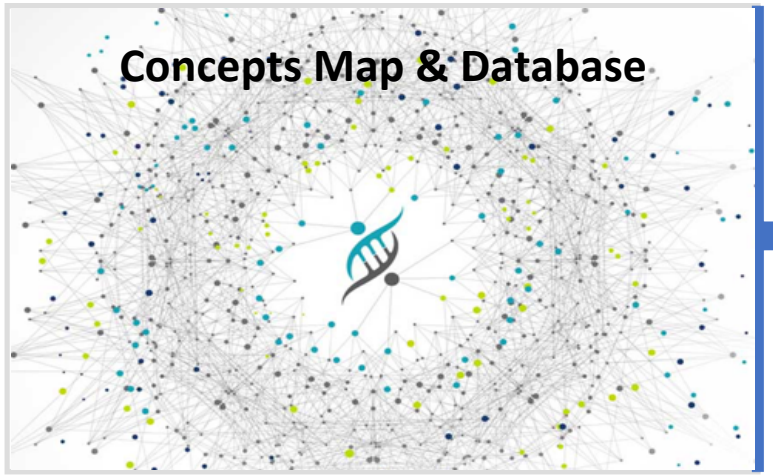
Tags

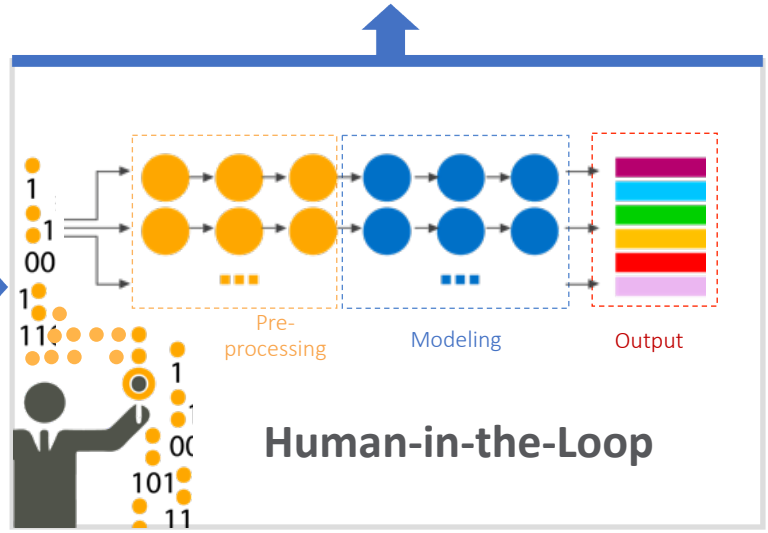
Hide Parents: Facet: Include/Exclude:

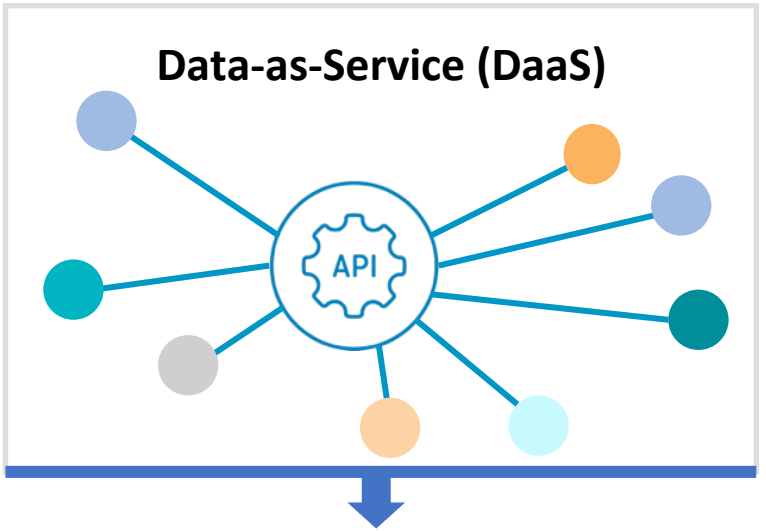
Term	Custom	Suppress	Facet	Generate...	GeneratedBy	Type	Priority
CDK4/6 inhibitor			DRUGCLASS	DRUG	Pd-0332991	include	0
CDK inhibitor			DRUGCLASS	DRUG	Pd-0332991	include	0
Wild-Type RB1			GENE	DRUG	Pd-0332991	include	1
CDKN2B			GENE	DRUG	Pd-0332991	include	1
CDKN2A			GENE	DRUG	Pd-0332991	include	1
CDKN2A Copy Number Loss			MUTATION	DRUG	Pd-0332991	include	1
CDKN2C Loss			MUTATION	DRUG	Pd-0332991	include	1
CDKN2B Loss			MUTATION	DRUG	Pd-0332991	include	1
CCND3 Amplification			MUTATION	DRUG	Pd-0332991	include	1
CCND2 Amplification			MUTATION	DRUG	Pd-0332991	include	1
CCND1 Amplification			MUTATION	DRUG	Pd-0332991	include	1
CDKN2A Loss			MUTATION	DRUG	Pd-0332991	include	1

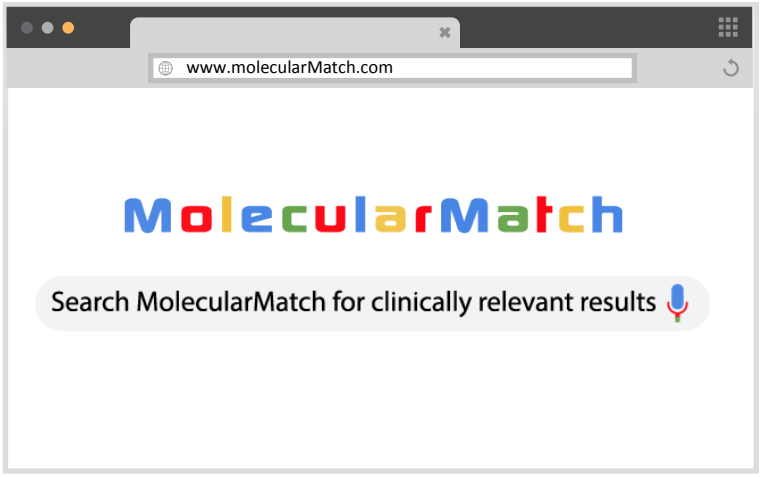
MolecularMatch Platform



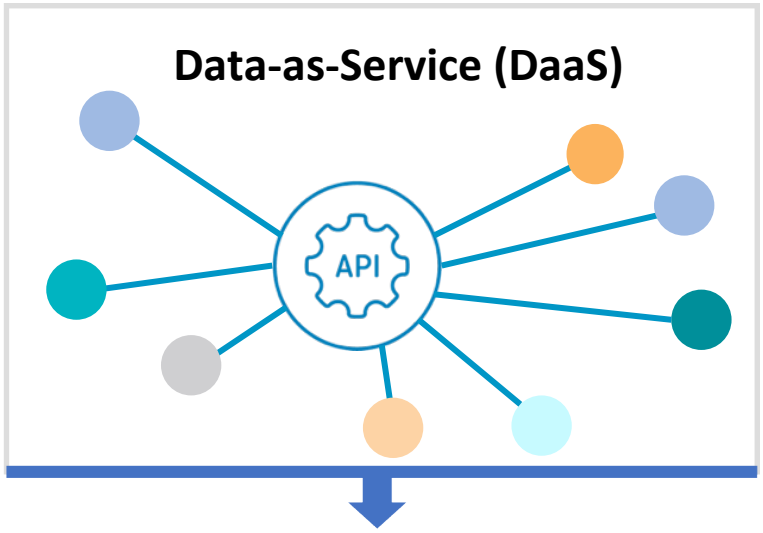


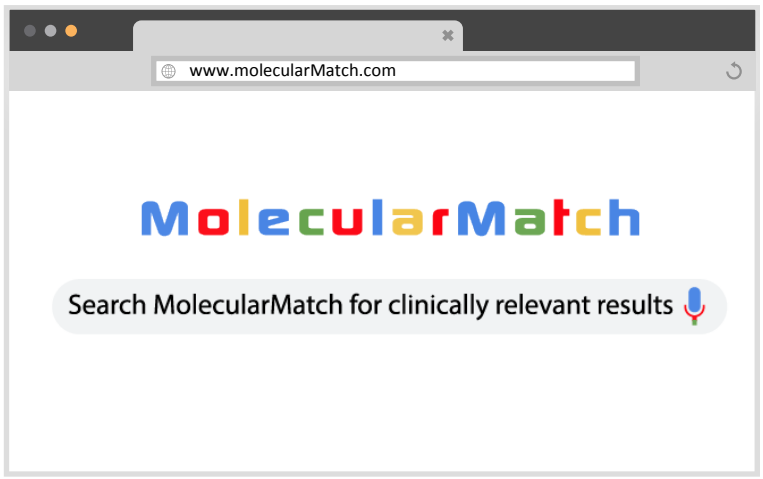






MolecularMatch is a Concept-based Search Engine





Term	Custom	Suppress	Facet	Generated	GeneratedBy	Type	Priority
Malignant neoplastic disease			CONDITION			include	0
Disease			CONDITION	CONDITION	Secondary mal…	include	0
Neoplastic disease			CONDITION	CONDITION	Secondary mal…	include	0
Neoplasm and/or hamartoma			CONDITION	CONDITION	Secondary mal…	include	0
Malignant tumor of lung			CONDITION			include	1
Neoplasm by body site			CONDITION	CONDITION	Non-small cell …	include	0
Disorder of respiratory system			CONDITION	CONDITION	Non-small cell …	include	0
Disorder of body system			CONDITION	CONDITION	Non-small cell …	include	0
Disorder of thoracic segment of trunk			CONDITION	CONDITION	Non-small cell …	include	0
Disorder by body site			CONDITION	CONDITION	Non-small cell …	include	0
Neoplasm of lung			CONDITION	CONDITION	Non-small cell …	include	0
Disorder of trunk			CONDITION	CONDITION	Non-small cell …	include	0
Malignant neoplasm of lower respi…			CONDITION	CONDITION	Non-small cell …	include	0
Malignant neoplasm of respiratory …			CONDITION	CONDITION	Non-small cell …	include	0
Disorder of thorax			CONDITION	CONDITION	Non-small cell …	include	0
Neoplasm of respiratory tract			CONDITION	CONDITION	Non-small cell …	include	0

Users search MM Terms

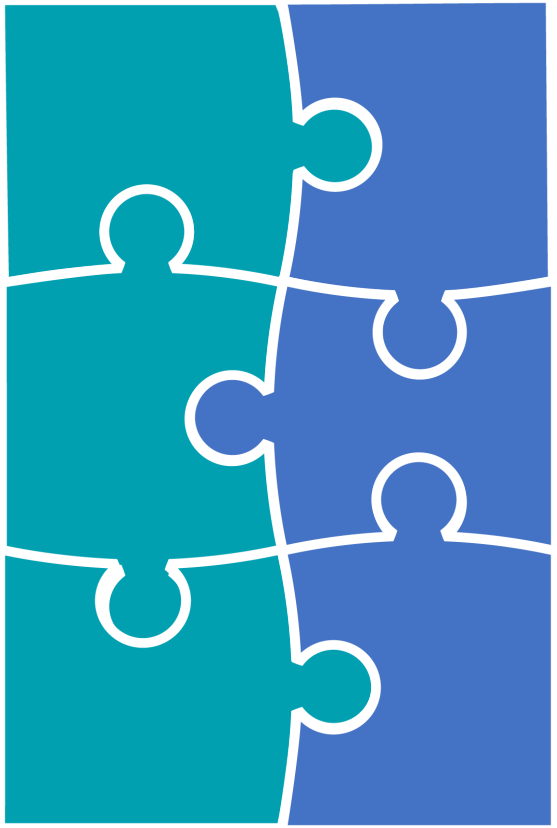
MolecularMatch Trials Data
Global Depth of Coverage

> 150	> 72,000	> 52,000,000
Countries covered	Oncology-specific clinical trials	Medical terms in cancer ontology

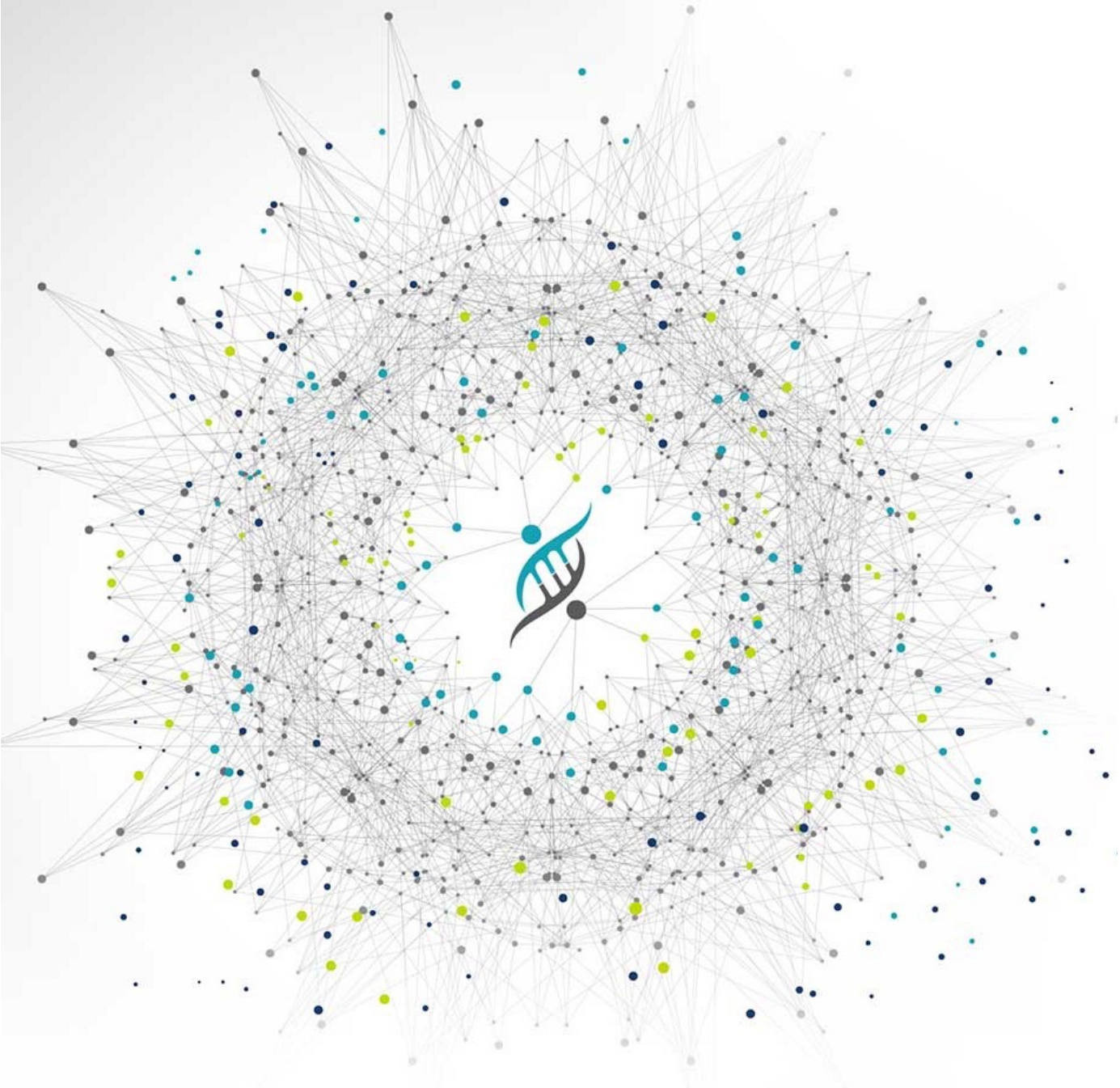
The Solution for Precision Medicine

Aggregated Clinically Relevant Metadata

- Age
- Gender
- Condition
- Stage
- Biomarker
- Alterations
- Tumor Location



- Path Lab Reports
- Metastasis
- Other Drugs
- Drug Resistance
- Contraindications
- Comorbidities
- TMB



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www.molecularmatch.com

Queensland Molecular Tumour Board Meeting

13th Nov 2019
Room 2004, TRI, Princess Alexandra Hospital,
Woolloongabba, QLD

CASE PRESENTATION

Dr POH SEE CHOO

Medical Oncologist

Greenslopes Private Hospital

Mater Cancer Care Centre

Sunnybank Private Hospital

OVARIAN CARCINOMA

FIRST PRESENTATION

35 year old female

R oophorectomy in Fiji 2009

- Borderline tumour
- CA125 continue to be elevated post-surgery
- 6 cycles of Cisplatin chemotherapy
- CA125 remained elevated post-chemotherapy

RECURRENT OVARIAN CANCER

Completion hysterectomy and L oophorectomy, resection of R adnexal mass in 2011 in New Zealand

-Review of original histology- confirm clear cell ca

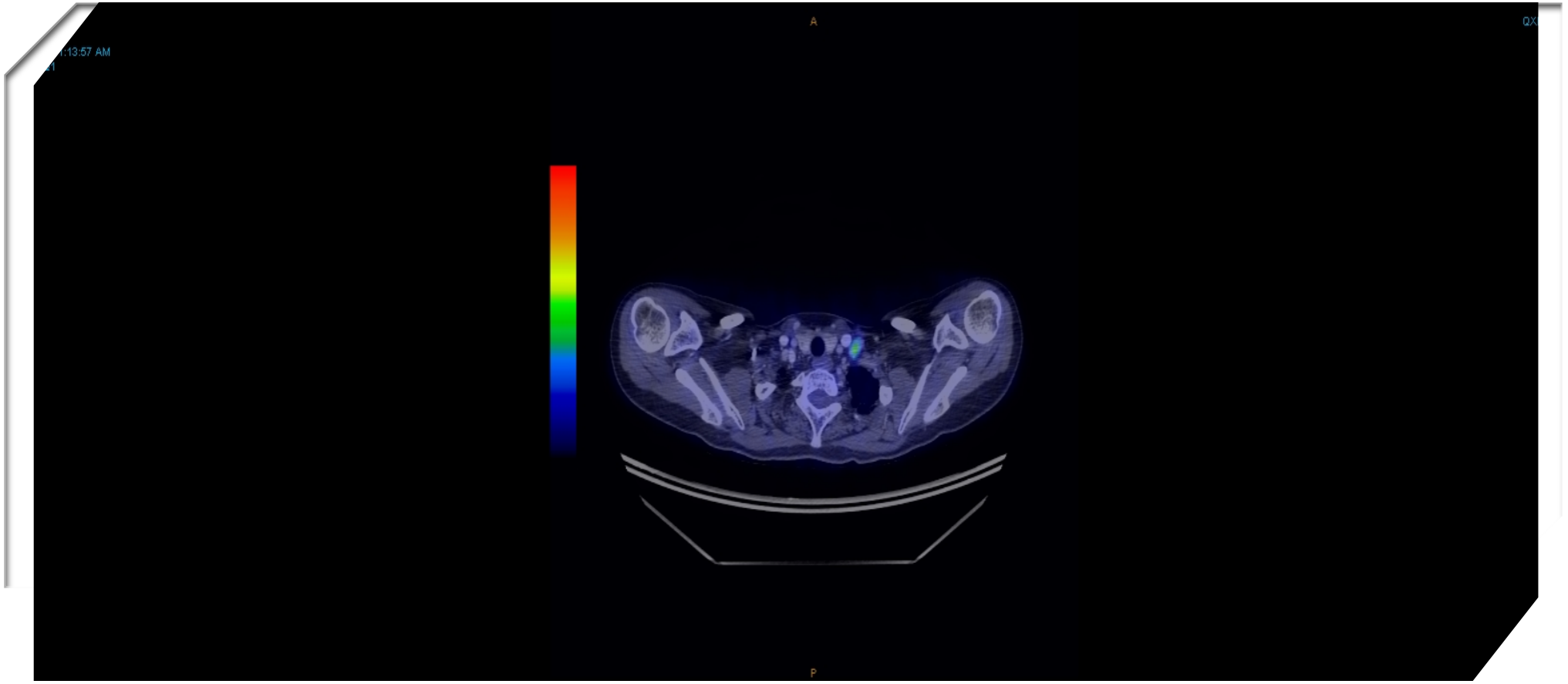
Regular follow up- no recurrence with normal CA125

SECOND RECURRENCE

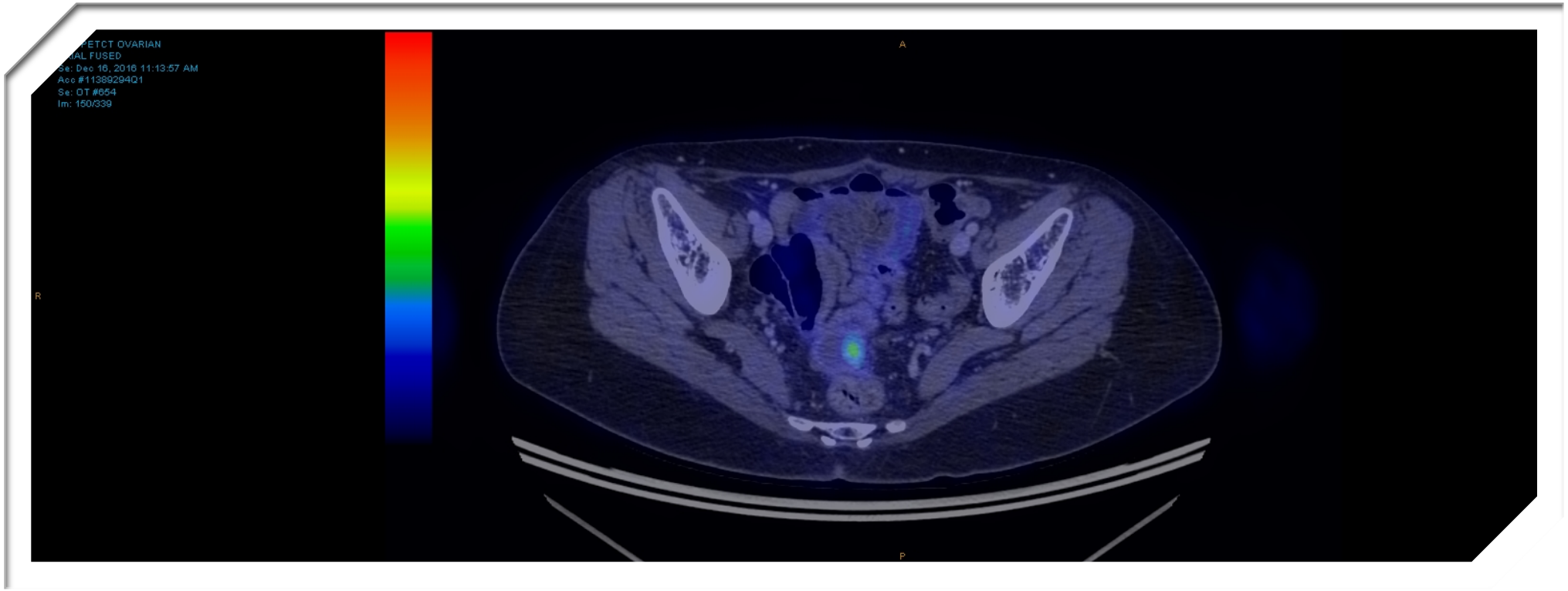
December 2016

- Elevated CA125 and L supraclavicular LN and pelvic recurrence on PET/CT
- FNA confirmed recurrent disease in supraclavicular LN

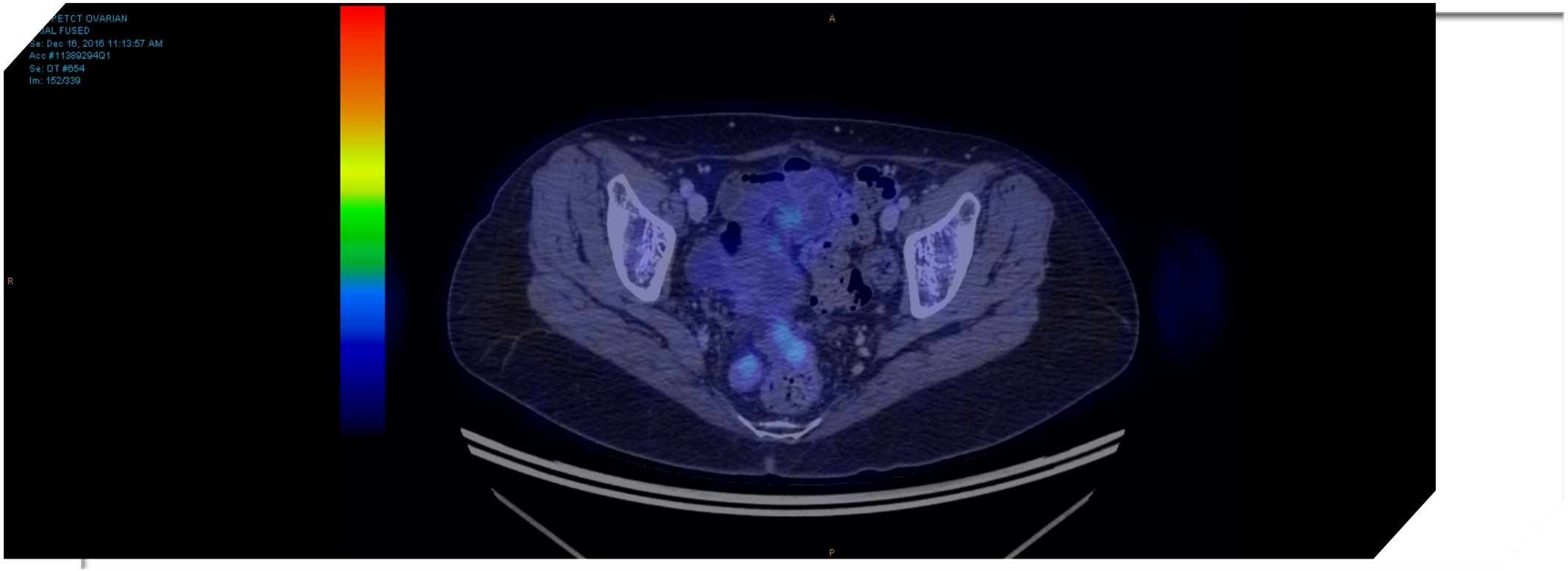
Received 3 cycles of weekly Carboplatin/Paclitaxel



DEC 2016



PELVIC RECURRENCE



PELVIC RECURRENCE

DEBULKING SURGERY

March 2017

- laparoscopic resection of the pelvic mass and peritoneal metastasis with residual disease fixed to the sacrum and rectosigmoid mesentery
- Colonoscopy- necrotic tumour invading into rectum

JULY 2017

- Ultralow anterior resection and loop ileostomy

POST OPERATIVE CHEMOTHERAPY

April 2017 to June 2017

- weekly carboplatin/paclitaxel

September 2017

- Carboplatin/Paclitaxel with Avastin
- Continue with 12 month Avastin

THIRD RECURRENCE

November 2018

- Recurrence in the L supraclavicular and mediastinal LN

Commence on Caelyx in Jan 2019

Progression with cerebellar metastasis

- Treated with stereotactic XRT

Changed to Avatisn/weekly Paclitaxel

- So far responded to treatment. CA125- normal; 17