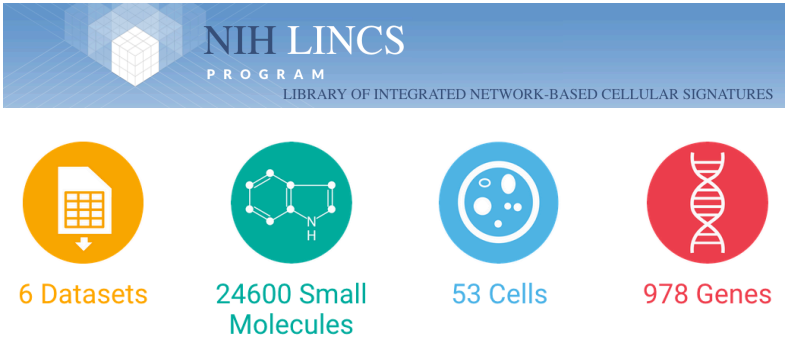


# Learning drug-perturbed data

Goal: deep learn drug responses and predict new drug indications (drug repositioning)

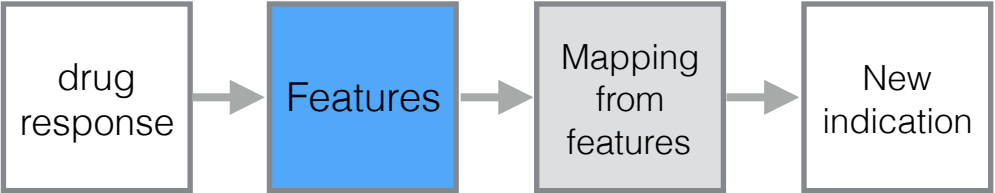
## Data overview



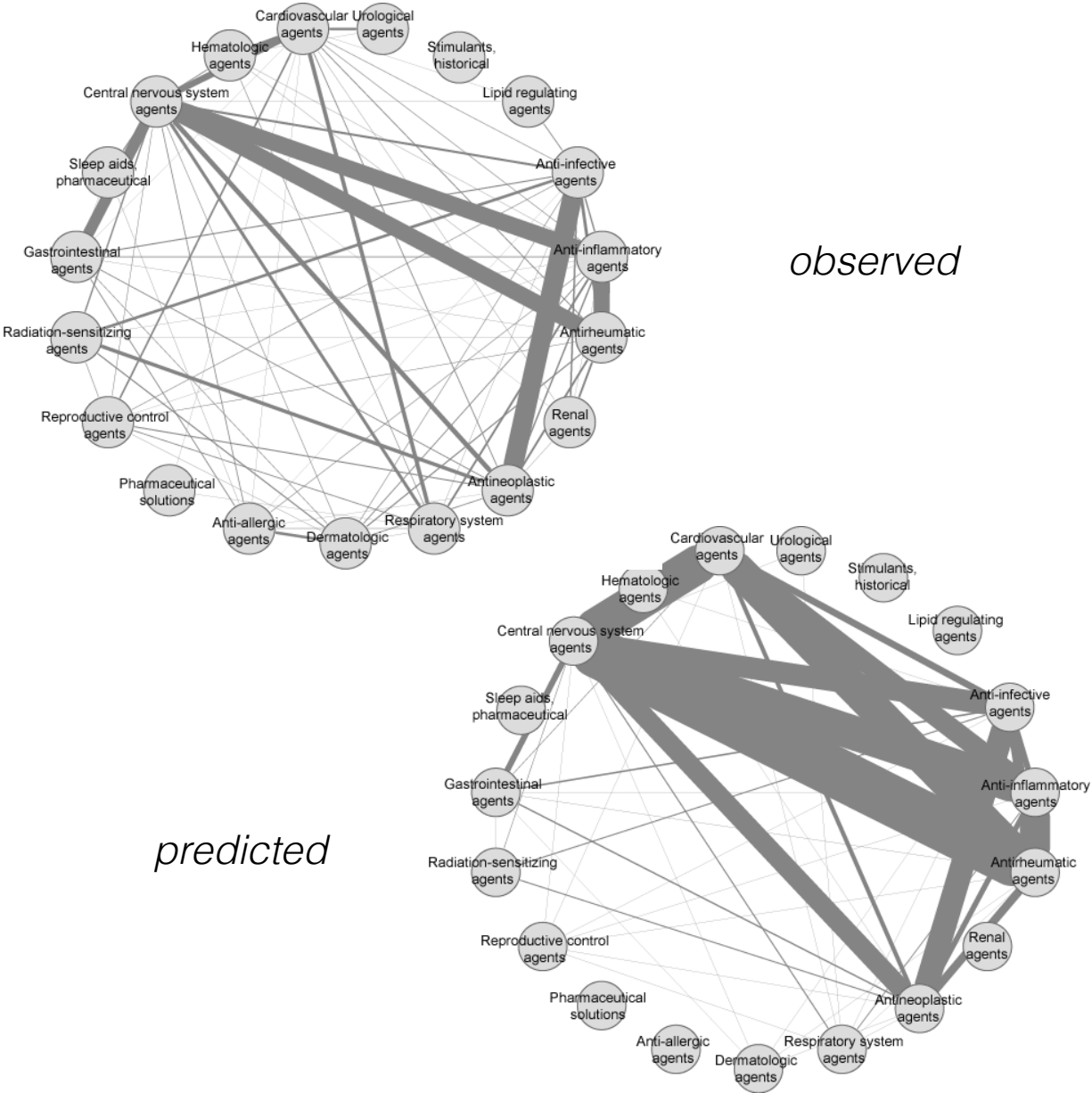
1240 compounds  
(19 therapeutic use)

...

978 landmark gene expression levels  
measured in 1,328,098 examples



## Ongoing result



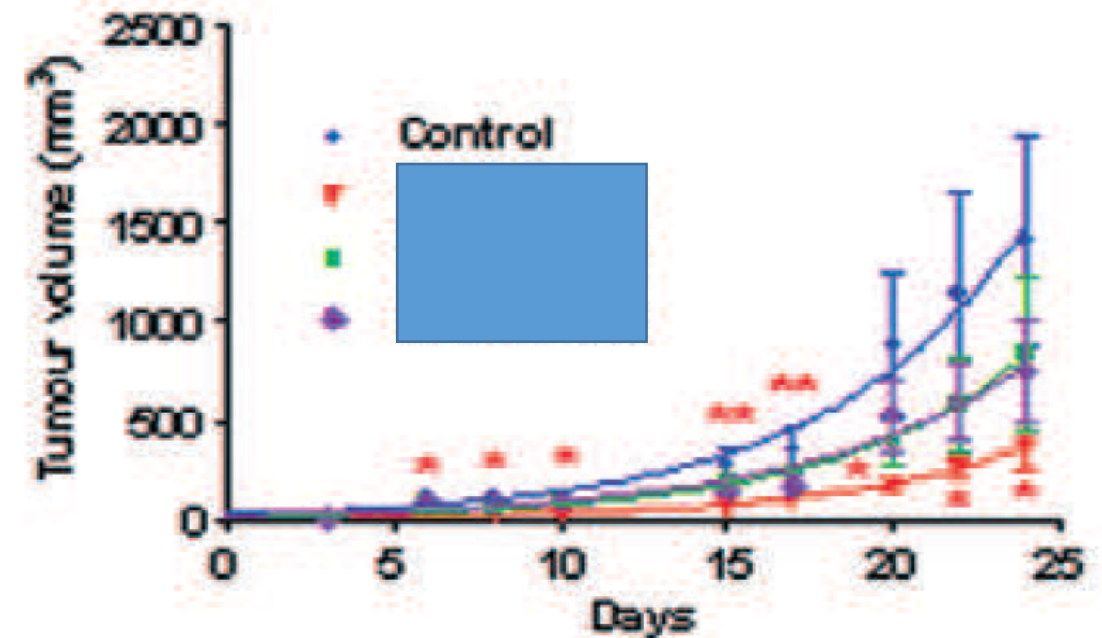
For Drugs X and Y

Indication : Asthma, COPD treatment

StandigmAI says

“ It may work as antineoplastic drug.”

Proven in in-vivo experiments!



*British Journal of Pharmacology (2012) 166 721–736*

[Br J Pharmacol. 2012 May;166\(2\):721-36. doi: 10.1111/j.1476-5381.2011.01791.x.](#)

**Involvement of  $\alpha$ 2- and  $\beta$ 2-adrenoceptors on breast cancer cell proliferation and tumour growth regulation.**

[Pérez Piñero C<sup>1</sup>](#), [Bruzzone A](#), [Sarappa MG](#), [Castillo LF](#), [Lüthy IA](#).

For Drug Z

Indication : CML (Chronic myelogenous leukemia)

StandigmAI says

“ It may improve pulmonary function.”

Proven in in-vivo experiments!

[PLoS One](#). 2016 Jan 20;11(1):e0147005. doi: 10.1371/journal.pone.0147005. eCollection 2016.

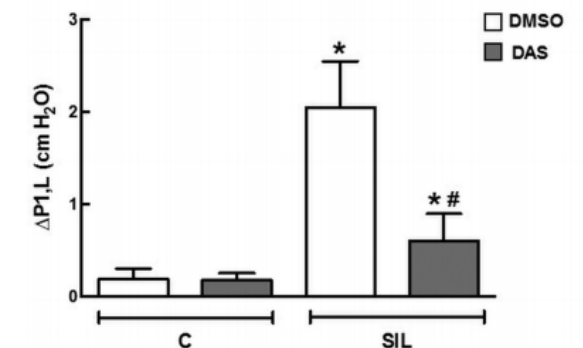
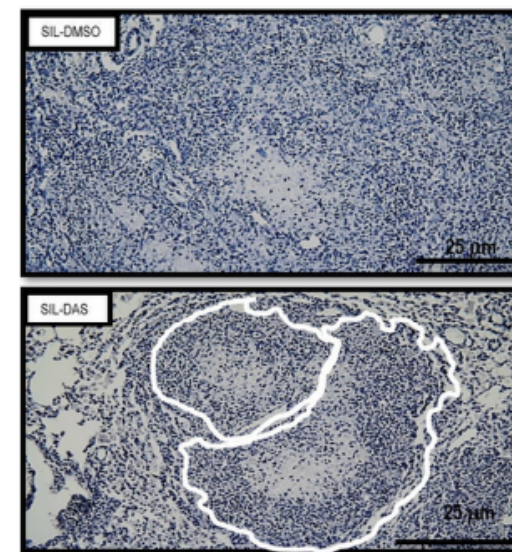
#### Dasatinib Reduces Lung Inflammation and Fibrosis in Acute Experimental Silicosis.

[Cruz FF<sup>1</sup>](#), [Horta LF<sup>1</sup>](#), [Maia Lde A<sup>1</sup>](#), [Lopes-Pacheco M<sup>1,2</sup>](#), [da Silva AB<sup>1,2</sup>](#), [Morales MM<sup>2</sup>](#), [Gonçalves-de-Albuquerque CF<sup>3</sup>](#), [Takiya CM<sup>4</sup>](#), [de Castro-Faria-Neto HC<sup>3</sup>](#), [Rocco PR<sup>1</sup>](#).

[Growth Factors](#). 2015;33(5-6):366-75. doi: 10.3109/08977194.2015.1109511. Epub 2015 Nov 25.

#### Dasatinib attenuated bleomycin-induced pulmonary fibrosis in mice.

[Yilmaz O<sup>1</sup>](#), [Oztay F<sup>1</sup>](#), [Kayalar O<sup>1</sup>](#).



PLoS One. 2016 Jan 20;11(1):e0147005.