# *OPEN INNOVATION* PARTNERSHIPS AT ASTRAZENECA:

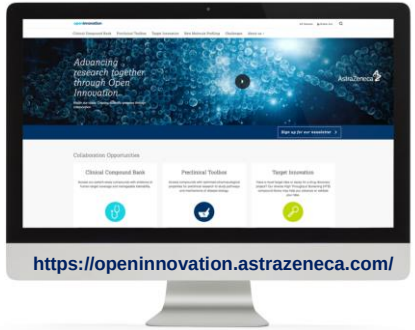
**Dave Smith & Adrian Freeman**

Open Access to Drug Discovery - CATS

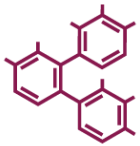
23rd November 2018

# Rationale for Open Collaboration

*Benefits to external collaborator and AstraZeneca*




## AstraZeneca



Compounds

Facilities

Drug Discovery Knowledge

## External Scientists

Disease Knowledge

Patients / subpopulations

Technology

**Questions that otherwise could not be asked**

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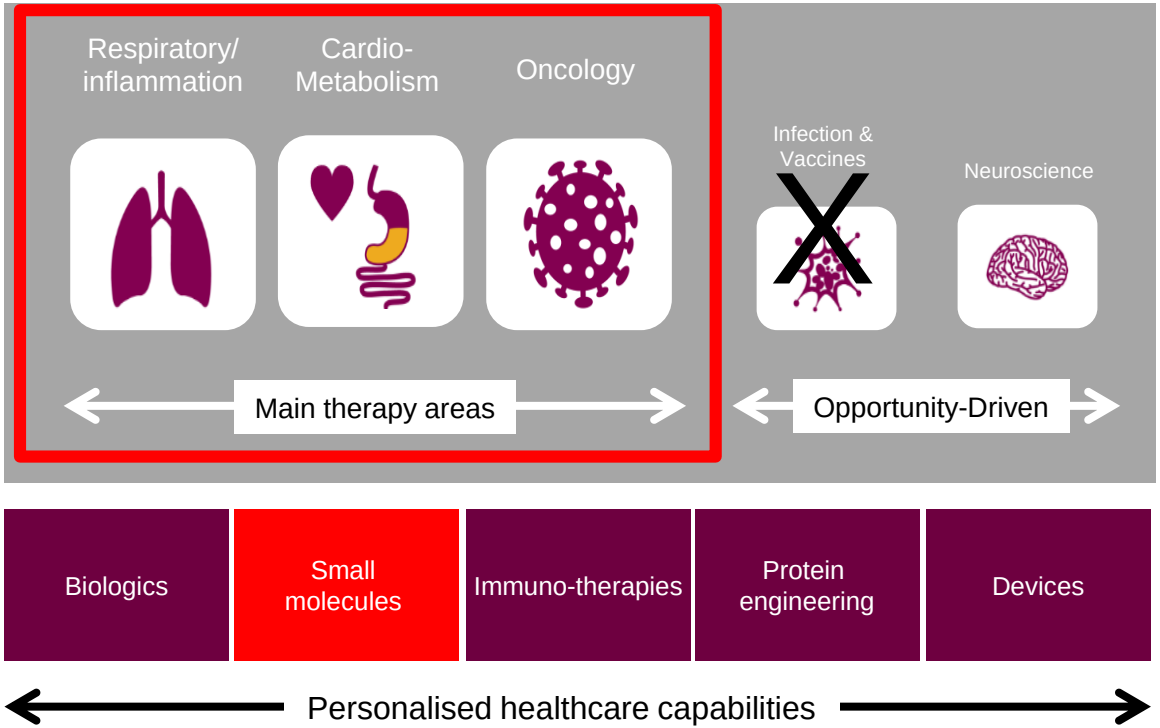
# Key Therapy Areas for AstraZeneca



# AstraZeneca Open Innovation 1

## Clinical Compound Bank

Access our patient-ready compounds with evidence of human target coverage and manageable tolerability.

Delivered:
- **30** ISS clinical validation studies

**Disease indication agnostic**

## Preclinical Toolbox

Access compounds with optimised pharmacological properties for preclinical research to study pathways and mechanisms of disease biology.


Delivered:
- 150+ projects approved

**Primarily in AZ main therapy areas**

## Target Innovation

Have a novel target idea or assay for a drug discovery project? Our diverse High Throughput Screening (HTS) compound library may help you advance or validate your idea.

Delivered:
- 62 projects on-going/complete

**Now aligned to AZ R&D focus areas**



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# AstraZeneca Open Innovation 2

## New Molecule Profiling

Explore the properties and therapeutic potential of your novel compounds by leveraging our cheminformatic and screening technologies.

Delivered:
- 30,000 natural product compounds added to AZ's HTS library

## Challenges

Offer and be rewarded for your innovative ideas and research expertise to help overcome difficult R&D barriers.

Delivered:
- 17 challenges run
- 2 collaborations delivered solutions

## Data Library

Access preclinical data sets on our early development compounds for data mining and research purposes. to enhance understanding of translation to human efficacy and safety.

**Launched June 2017**
- Preclinical safety data
- Oncology combinations data

# Preclinical Toolbox & Clinical Compound Bank

*How does it work?*

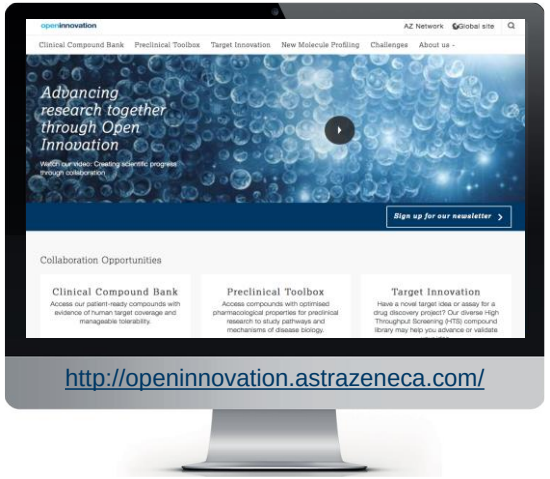
## AZ Open Innovation web portal provides:

- List of available compounds
- Mechanism of action / target class
- Original disease area / indication(s)
- Route of administration
- CNS penetration

# Applications to AZ Open Innovation

*Guiding Principles*

- Review what we offer
- Submit a non-confidential proposal
- If mutual interest ⇒ discuss further (CDA, MTA)
- If positive results ⇒ AZ option to negotiate license




http://openinnovation.astrazeneca.com/

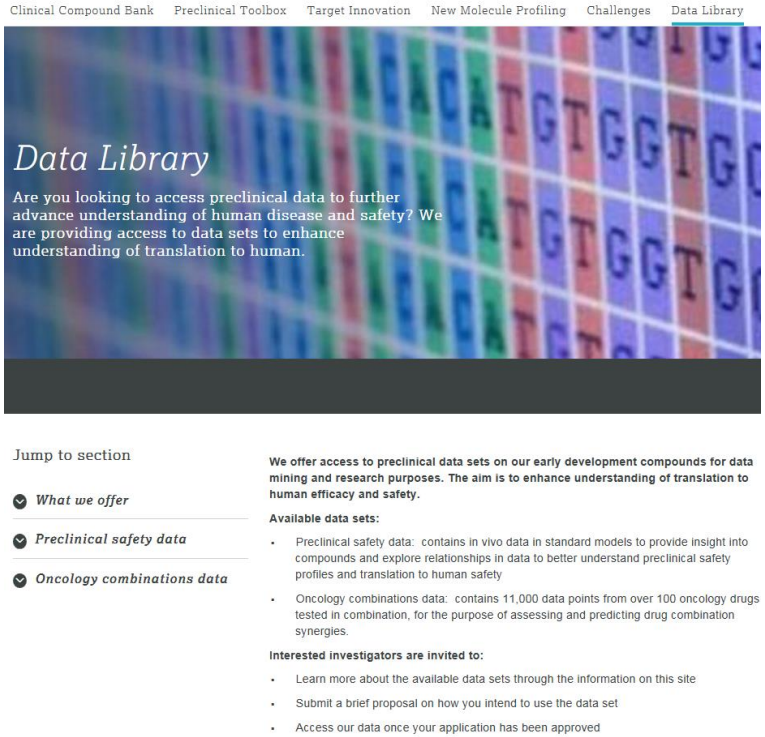
More details:

- Pre-existing IP remains with original owner
- New IP – ownership framework taking into account the contribution of each party. Generally data belongs to academic partner and AZ only claims compounds developed by AZ
  Publication encouraged

# Data Library

- New data library module launched June 2017
- Only pharma company openly sharing large amounts of preclinical data
- Oncology combinations and preclinical safety data currently available; more coming later in 2017

**New Data Library Module Launched**



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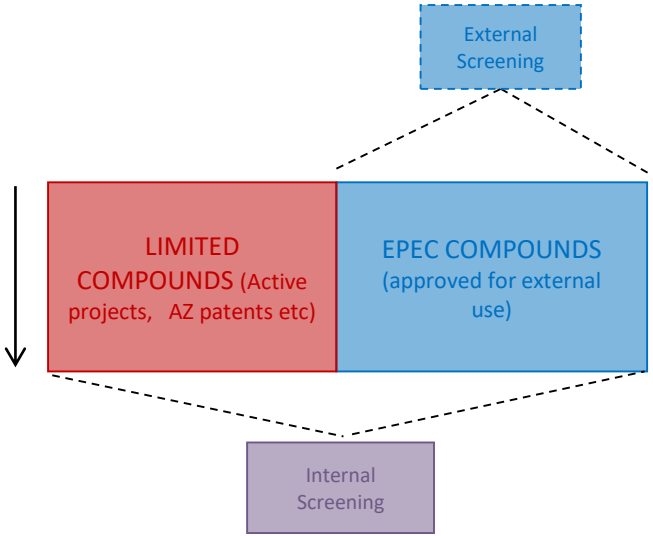
# Target Innovation:
# External Partnership Screening Set




## EPEC- a flexible screening set for external partnerships

- Includes compounds of sufficient volume, without current project activity constraints; no ELF set, or AZ patent compounds
- **External screening partners can access sets of up to 250k compounds in 50k tranches**
- AZ also screens this set as part of our HTS strategy
- Allows external screening partners broad coverage of AZ collection's chemical space



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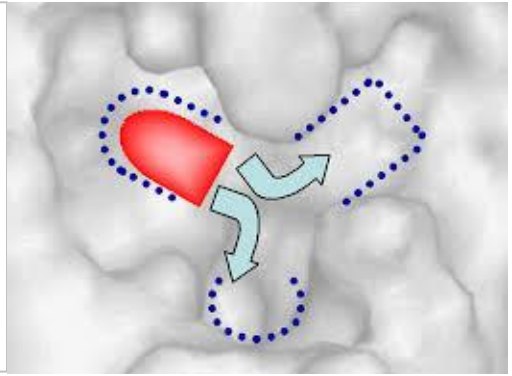
# More screening collections available

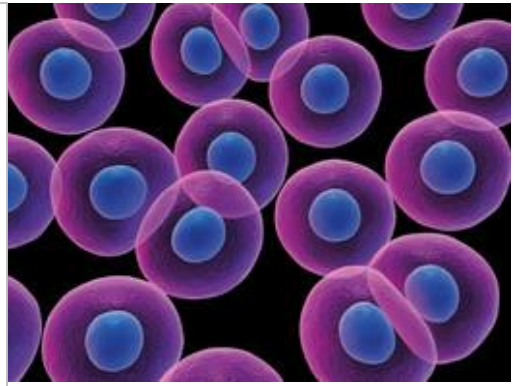
**Fragments**

- >17K fragments
- Average 15 heavy atoms
- Average cLogP = 1.3.
- The set can be screened as a whole or as a subset that can be cherry-picked depending on the throughput of the assay technology



**Annotated Phenotypic Library**

- 14K well annotated tool compounds.
- Compounds that have an affinity of < 100 nM on > 1200 human targets.
  - Pre- and clinical candidates
  - Compounds profiled extensively in selectivity panels,
  - Tool compounds
  - Marketed drugs
  - Many compounds not commercially available
- Powerful chem- and bioinformatics methods can be applied to identify a preliminary target list




and

https://www.astrazeneca.com/partnering/externally-sponsored-scientific-research.html

But most importantly please talk to us:
Adrian Freeman (Clinical and preclinical compounds, Data Library) adrian.freeman1@astrazeneca.com
Dave Smith (Target Innovation, New Molecule Profiling) dave.smith@astrazeneca.com