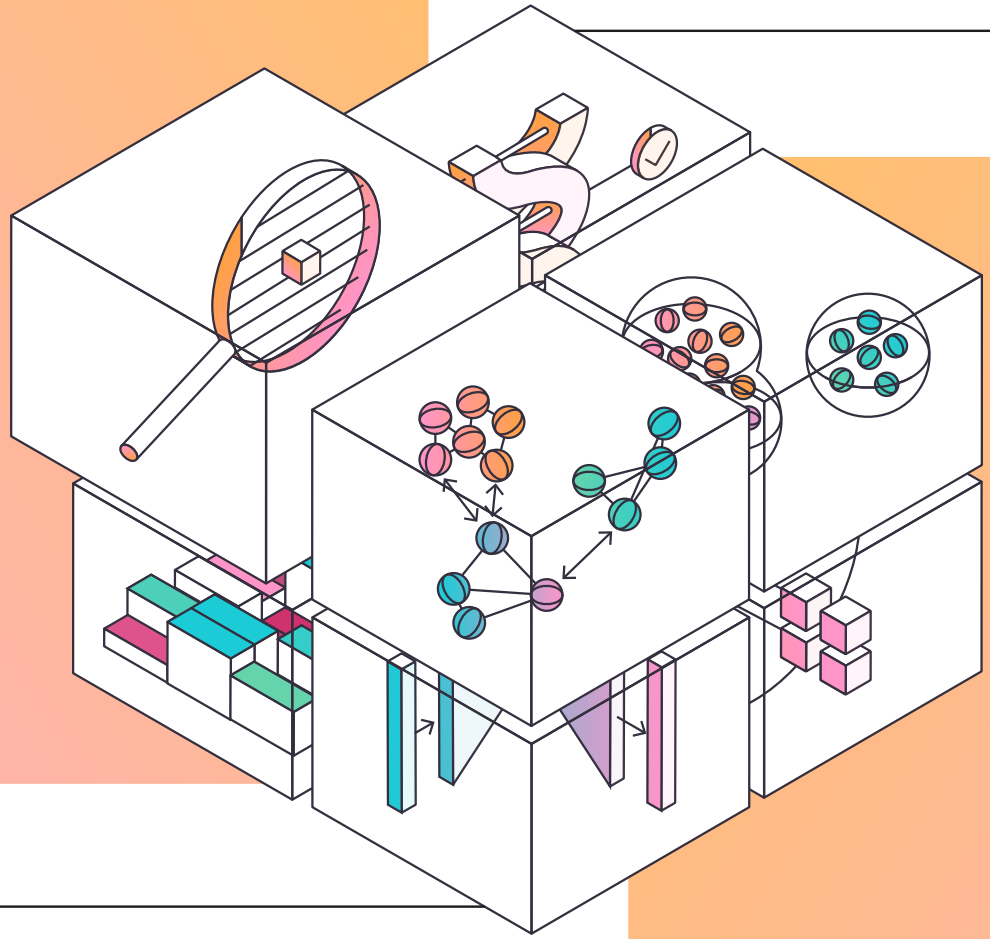
immunai

A Target Discovery Workflow Designed for Precision Medicine

Immunai delivers **novel targets with precise therapeutic hypotheses** and **detailed data packages** to enable our **partners' pipeline decisions**



We implement **proprietary machine-learning** approaches on high-resolution data from patients and model systems to **discover and validate targets** that matter most in disease

Our Approach

Evidence based
A patient-derived single cell atlas powers target discovery, ensuring insights are directly informed by human disease biology

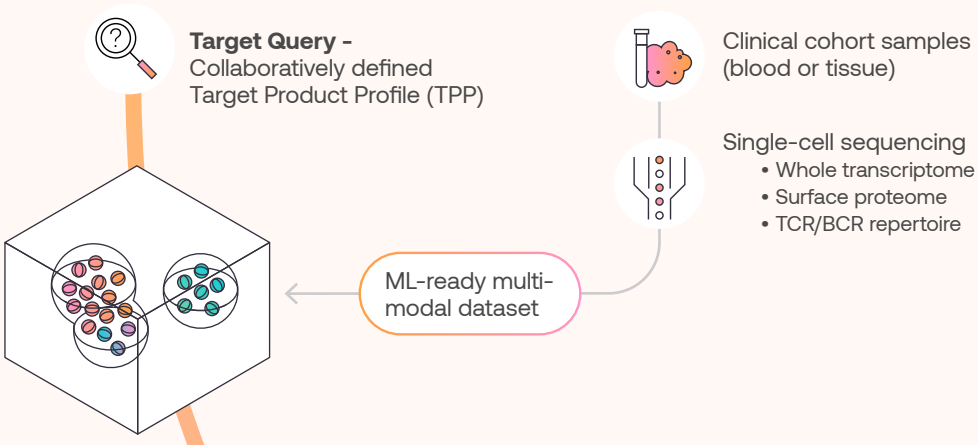
Disease relevant
Dissecting disease mechanisms at high resolution enables testing of preclinical hypotheses in relevant model systems

Data-driven
Clinically relevant target validation ensures our data-driven recommendations have a higher likelihood of successful translation to the clinic

01. GENERATE

Deep, Multi-omic Data

Starting from customer clinical samples, we apply single cell sequencing to GENERATE high quality, **high resolution multi-omic data.**

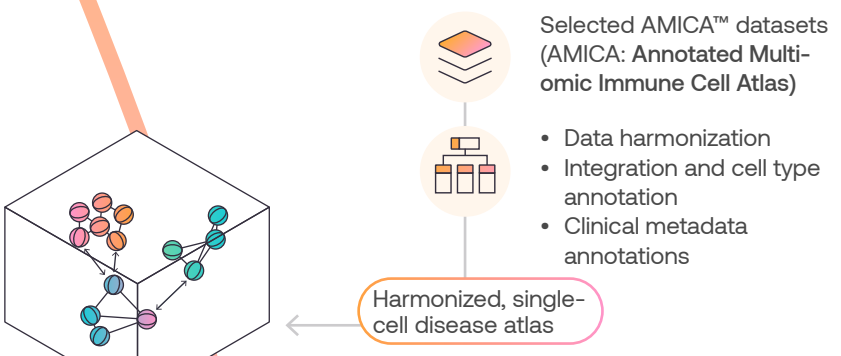


02. AUGMENT

AMICA™-Powered Data Foundation

We AUGMENT customer datasets with studies contained in **AMICA™**, integrating millions of cells into a **highly differentiated data foundation.**

Importantly, we **harmonize clinical metadata** to enable a unified analysis of many disparate studies.



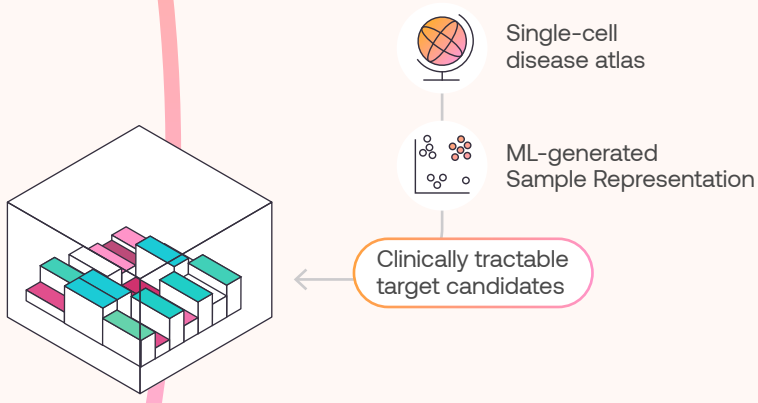
03. COMPUTE

ML-Driven Target Discovery

With our harmonized disease atlas, we apply machine learning to identify candidate target genes.

We COMPUTE a Sample Representation from high dimensional single cell data, in order to **link cell type specific targets to disease and treatment outcomes**.

Our models **rank targets** based on biological and therapeutic relevance, with our experts further refining selection to fit the desired TPP.



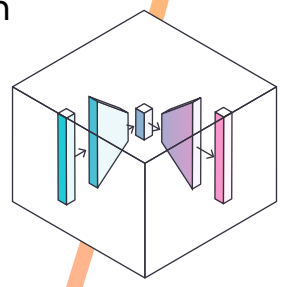
04. VALIDATE

Disease Relevant Target Validation

Next, we VALIDATE candidate targets to understand their **impact on the disease process.**

A disease-relevant model system is optimized for each target. ***In vitro* knockout effects** are characterized through an **integrative analysis** measuring key disease-related processes.

These insights are mapped back to human samples to confirm clinical relevance.



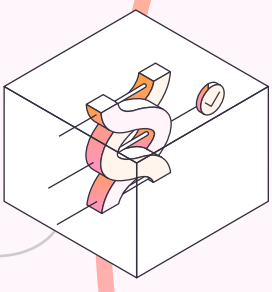
Optimized disease relevant model systems

in vitro/ in vivo functional validation

Validated target candidates

05. RECOMMEND

Translating Data into Therapeutic Strategies



Recomendation towards drug development decision making

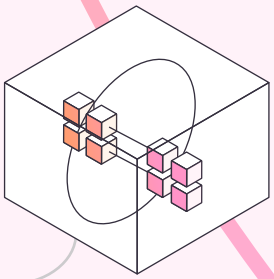
The right patient population
Example recommendation: A target that is induced in patients following Standard of Care treatment could be strategically modulated after discontinuation to maximize therapeutic benefit.

The right cell type
Example recommendation: A target with a pathogenic function in fibroblasts and a protective function in macrophages should be selectively modified in fibroblasts.

06. EXPLAIN

Target Data Package

Comprehensive **data package** for each target ***explains*** clinical data supporting the therapeutic hypothesis.



Target data package

Expert immunological insight

Key in vitro/ in vivo functional validation data

Clinical significance of experimental data to patients

Our Impact

Novel Targets

Our platform identifies and validates novel, actionable, molecular targets

Informed Decision-Making

We empower our partners to make precise, data-driven decisions that de-risk their drug development pipeline

Maximized Success

By prioritizing target candidates with a higher likelihood of success, we help drive more effective therapies

Selected publications

Van de Sande, Bram et al.
Applications of single-cell RNA sequencing in drug discovery and development
Nature reviews. Drug discovery vol. 22,6 (2023): 496-520.
doi:10.1038/s41573-023-00688-4

G De Baets et al.
Inflammatory Bowel Disease single cell atlas construction to enable cell-type-specific target identification
ECCO 2023 DOP40
Abstract citation ID: jjad212.0080

G De Baets et al.
An integrated single-cell atlas enables the discovery and validation of a novel candidate therapeutic target for Inflammatory Bowel Disease
ECCO 2025 DOP132
Abstract citation ID: jjae190.0171

immunai

www.immunai.com
430 E 29th St New York, NY 10016 USA
info@immunai.com | press@immunai.com