Angler Imputation – High-Resolution Immunogenomics From Microarray Data

BENTHIC GENOMICS

What Angler Does

- Converts standard genotyping arrays into comprehensive HLA and immune gene typing with clinical-grade accuracy, no new wet-lab steps required
- Robust across diverse ancestries, with 2-4x better performance than common imputation approaches in non-European populations
- Delivers >95% accuracy at 3-field HLA resolution across 45 immune genes in a single analysis
- Scales to biobank cohorts by processing thousands of samples in minutes via a secure cloud platform

How It Works

1 Run samples on any microarray

- Infinium Arrays: GSA, GCRA, GDA
- Axiom Arrays: PMDA, BloodGenomiX
- Your custom array

2 Upload & analyze on Benthic Analysis Platform

- Secure data transfer
- Simple web interface
- Analysis of thousands of samples in just a few minutes

3 Explore results, export data, & download reports

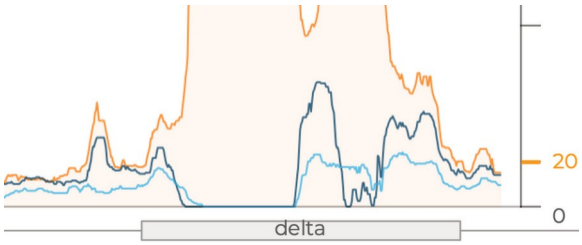
- Filter and sort data for export in CSV format
- Download a PDF of HLA typing with known drug associations & allele frequency

Performance Highlights

Delivering >95% 3-field accuracy across 45 genes in HLA

Accuracy			
	1-field	2-field	3-field
11 genes	0.99	0.98	0.96
45 genes	0.99	0.98	0.96

Simulated array data for 44 samples. Performance evaluated against allele calls obtained from ground-truth-quality assemblies from long-read data.

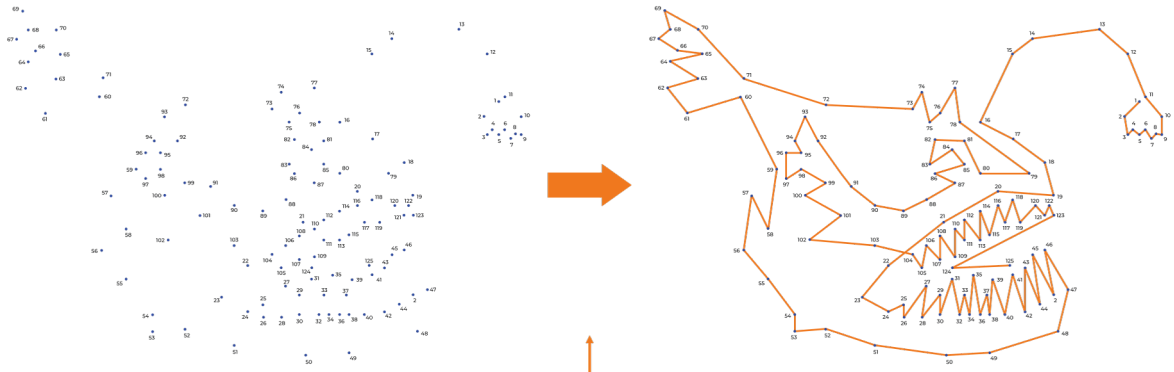


Unlike other panels (blues) that completely miss variation in the highly polymorphic HLA delta block, Benthic (orange) detects hundreds of variants in that same region.

To request a demo or discuss how to analyze microarray datasets for high-resolution immunogenetic insights, visit www.benthic.bio or contact the team at info@benthic.bio.

Why It Works

Our graph-based reference connects variants across thousands of diverse, phased haplotypes.



Graph-based reference panels

Our database of phased haplotypes from thousands of samples for complex regions enable high-quality, accurate results

Specialized algorithms

Achieved maximum variant recall and typing accuracy in diverse populations with our algorithms built on this unique data.

Key applications

Transplantation Research

High-resolution HLA matching for HSCT and solid organ studies

Immuno-Oncology

Characterize patient immune profile and immunotherapy response markers

Autoimmune Disease

Study HLA associations in T1D, MS, RA, lupus, and neurodegeneration

Population Genomic

Add high-resolution immune profiling to biobank-scale studies

Pharmacogenomics

Profile polymorphic drug response genes alongside HLA

Contact

Request a demo or pilot on your array data: benthic.bio/#demo
Learn more: **www.benthic.bio**