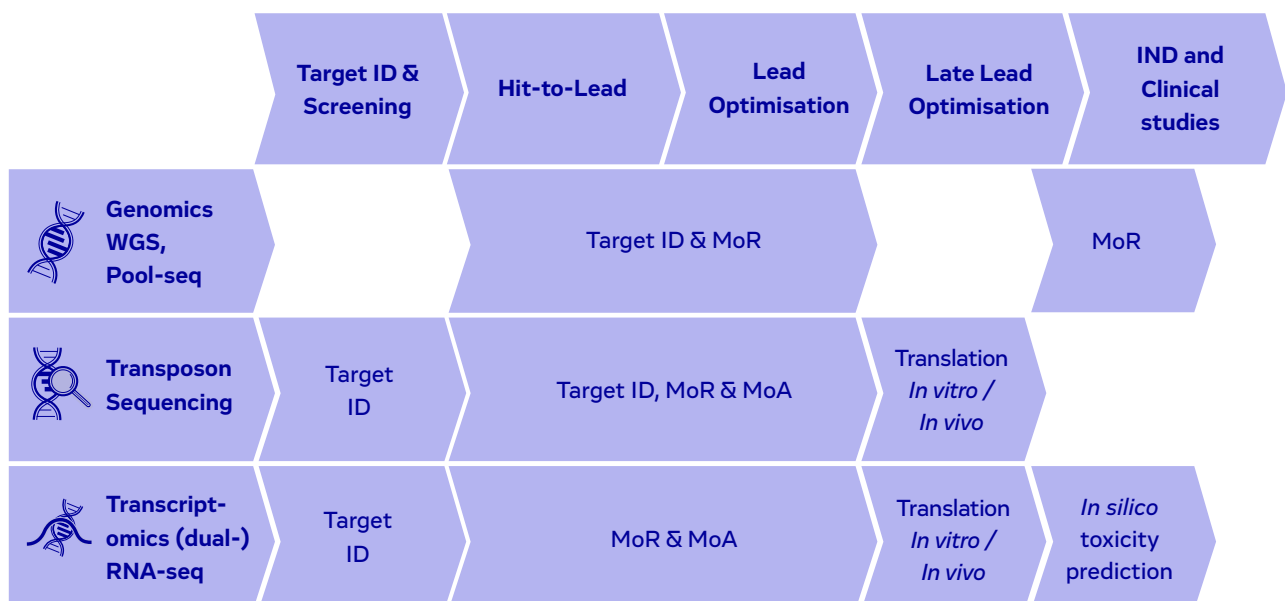


Functional Genomics for Infectious Disease

- ▶ Pathogen functional genomics analyses for unbiased, multidimensional small molecule effect characterisation (RNA-, DNA-seq analyses to characterise pathogen genome and transcriptome)
 - Genome assembly and annotation with a focus on resistance and virulence (Illumina, ONT, hybrid)
 - Short- (SNP, short indels) and long-range (insertion, deletion, inversion, translocation, duplication) variant analysis associated with resistance (Illumina, ONT)
 - Bacterial genome wide association study (GWAS)
 - Transcriptome analysis (RNAseq) and functional interpretation
 - Bacterial population sequencing and variant characterisation (PoolSeq)
 - Molecular phylogeny
 - Network analysis (enrichment analysis, pathway mapping)
- ▶ Custom bioinformatics analyses using Artificial Intelligence (AI)

Pathogen and host response multi-omics analyses





- ▶ Infectious Disease expertise combined with state-of-the-art infrastructure for analysis and interpretation of large datasets using advanced AI/ML approaches
- ▶ Genomics database of EvoStrain™, Evotec's large and rapidly evolving collection of phenotypically characterised strains
- ▶ EvoStrain™ genomics toolbox to design *in silico* optimised screening panels according to Target Product Profile (TPP)
- ▶ *In silico* strain typing, pangenome analysis, plasmid identification, target comparative genomics/protein analysis
- ▶ Saturated transposon library sequencing for MoA, MoR and translational model assessment, using essential gene and differential fitness analyses
- ▶ Genome scale metabolic model analysis for omics data integration identifying MoA and MoR to de-risk programs
- ▶ BSL2/3, NGS, phenomics and bioinformatics 'under the same roof'

From genome-wide data to hypothesis

