

Twist Alliance Long-Read PGx Panel v2

Focused pharmacogenomics (PGx) sequencing for drug metabolism and response characterization

Pharmacogenomics (PGx) testing identifies inherited variants that potentially impact metabolism and response to therapeutic compounds. Short-read sequencing and array-based genotyping cannot reliably resolve structurally complex pharmacogenes such as CYP2D6, resulting in ambiguous haplotypes and incorrect phenotype calls.

The Twist Alliance Long-Read PGx Panel pairs Twist's long-read hybridization capture workflow combined with sequencing on PacBio HiFi or Oxford Nanopore long-read sequencing platforms. The PGx v2 panel enables economical enrichment to fully phase variants in these loci, enabling confident allele calling across key PGx genes at scale.

HIGHLIGHTS

Comprehensive pharmacogenomic content

- Covers key pharmacogenes commonly studied in PGx research, such as CYP2D6 and DPYD.
- Use of long reads enables accurate allele phasing.

Improved coverage and yield

- Improved probe tiling strategy across targets to better resolve complex loci.
- Updated library preparation protocol increases post-capture yield for more reliable conversion to long-read sequencing.
- Validated with TrueAmp Polymerase (Twist Bioscience) integrated into the workflow for high-fidelity amplification.

Updated Workflow

- Compatible with both PacBio HiFi and Oxford Nanopore long-read platforms.
- Easily expand targets with a Custom Long-Read panel.

Panel specifications

GENES COVERED	30 genes with option to add Mito Panel for MT-RNR1 coverage
SAMPLE TRACKING SNPS	26
TARGET REGION SIZE	1.8 Mb
SEQUENCING PLATFORM COMPATIBILITY	Pacific Biosciences HiFi Sequencing; Oxford Nanopore Technology Nanopore sequencing
WORKFLOW	Hybridization capture panel with long-fragment library preparation protocol
PGx GENES	CYP: CYP1A2, CYP2B6, CYP2C19, CYP2C9, CYP2D6, CYP3A4, CYP3A5, CYP4F2 HLA: HLA-A, HLA-B General PGx: ABCG2, CACNA1S, CFTR, COMT, DPYD, F2, F5, G6PD, HTR2A, IFNL3, MTHFR, NAT2, NUDT15, OPRM1, RYR1, SLC6A4, SLC01B1, TPMT, UGT1A1, VKORC1 Sample Tracking SNPs: 26

Data

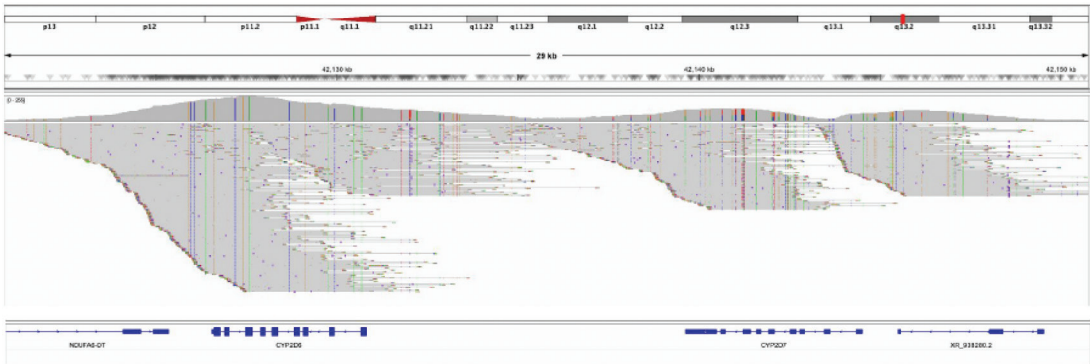


Figure 1. Example coverage of difficult-to-sequence regions such as CYP2D6 on ONT nanopore sequencing with adjacent coverage of a pseudogene for unambiguous phasing of variants.

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ORDERING INFORMATION
131401: Twist Alliance Long-Read PGx v2 Panel, 2 Reactions
131402: Twist Alliance Long-Read PGx v2 Panel, 12 Reactions
134114: Twist Alliance Long-Read PGx v2 Panel, 96 Reactions

For inclusion of coverage of the mitochondrial genome, the PGx v2 panel can be paired with the Twist Mitochondrial Panel

102038: Twist Mitochondrial Panel, 2 Reactions
102039: Twist Mitochondrial Panel, 12 Reactions
102040: Twist Mitochondrial Panel, 96 Reactions