

**A**

## OracleCheck Protocol

### 1. Physics Conformity

Z-scores per physics family vs natural enhancers. Soft:  $|z| > 2.5$   
Hard:  $|z| > 4.0$

### 2. Composition Hygiene

GC: 0.35–0.75, CpG ratio, entropy, repeats <0.3, homopolymer <10 bp

### 3. Confidence / OOD

Epistemic unc. <P90, conformal width <P95, KNN OOD score <P95

### 4. RC Consistency

$|\hat{y}(\text{seq}) - \hat{y}(\text{RC})| < 0.1$ , ISM symmetry  $\geq 90\%$

### Verdict Logic

**GREEN**

All 4 checks pass

**YELLOW**

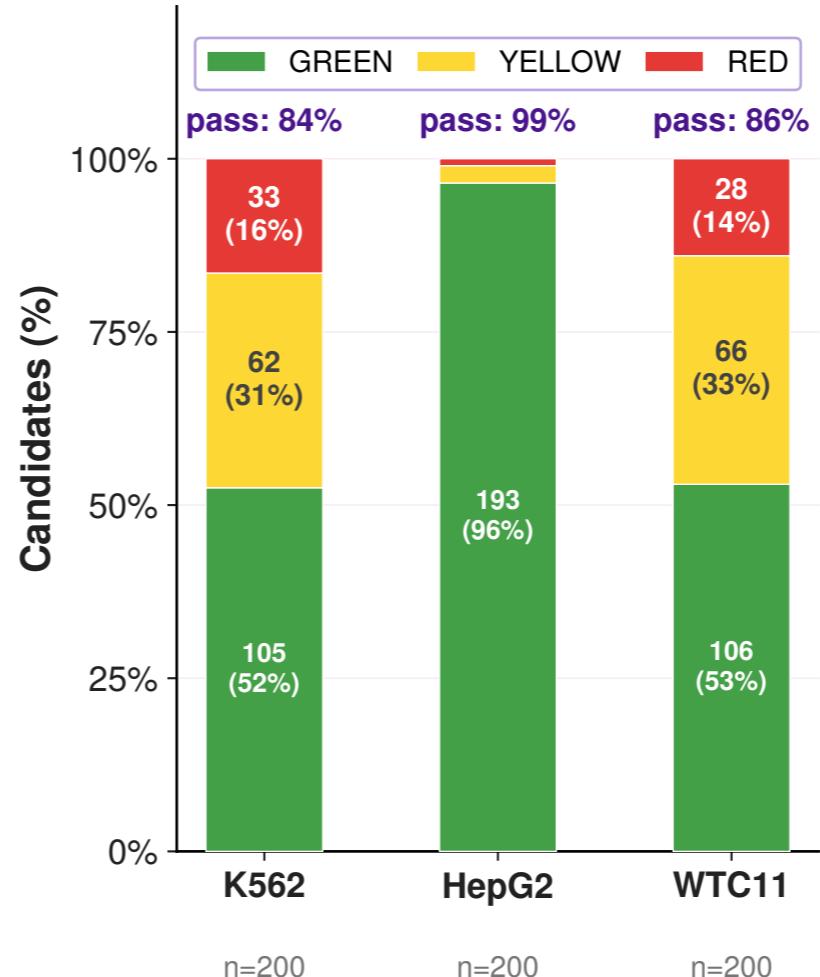
$\leq 1$  soft failure only

**RED**

Any hard failure OR  
 $\geq 2$  soft failures

**B**

## Therapeutic Candidate Validation Verdicts

**C**

## Top-10 Candidate Specificity Scores

