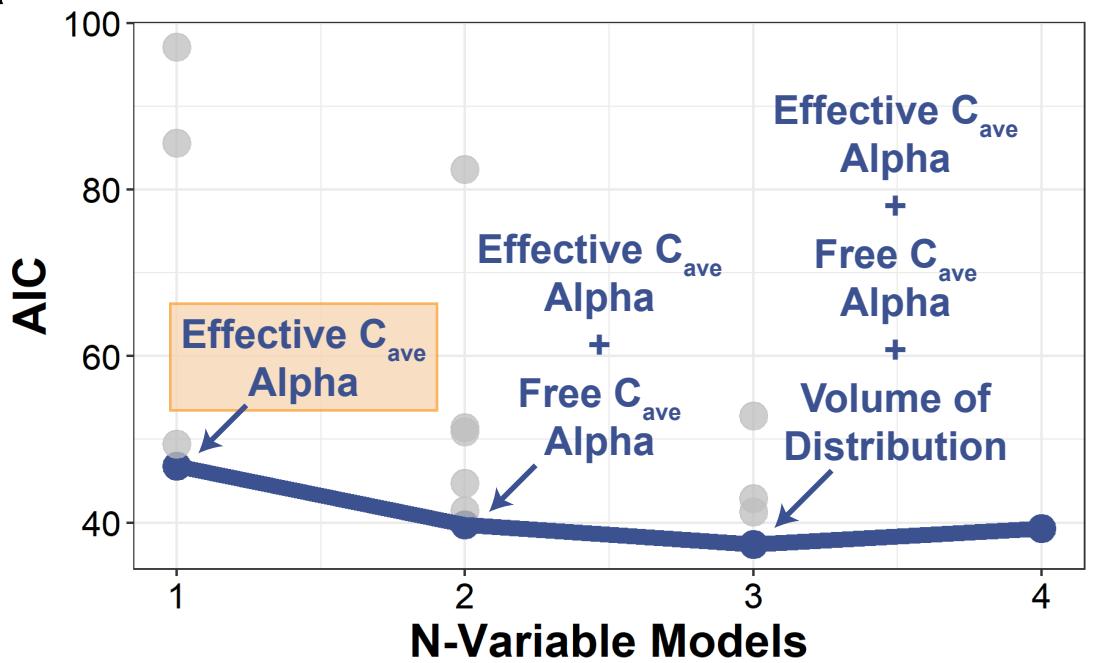


a

Model Selection: AIC

**d**

Predicted Clinical Outcomes: ABL

| Genotype | Imatinib | Nilotinib | Dasatinib | Bosutinib | Ponatinib |
|----------|----------|-----------|-----------|-----------|-----------|
| WT | (S) 0.77 | (S) 1.52 | (S) 1.35 | (S) 1.31 | (S) 3.50 |
| M244V | (R) 0.66 | (S) 1.17 | (S) 0.80 | NA 0.63 | (S) 1.36 |
| L248V | (R) 0.08 | (S) 0.45 | (S) 0.34 | NA 0.14 | NA 1.25 |
| G250E | (R) 0.06 | (S) 0.22 | (S) 0.33 | NA 0.27 | (S) 0.75 |
| Q252H | (R) 0.03 | NA 0.64 | NA 0.68 | NA 0.53 | NA 1.47 |
| Y253F | (R) 0.06 | NA 0.62 | NA 1.35 | NA 1.09 | NA 2.09 |
| Y253H | (R) 0.00 | (R) 0.01 | (S) 0.56 | NA 0.72 | NA 1.19 |
| E255K | (R) 0.02 | (R) 0.38 | (S) 0.60 | NA 0.40 | (S) 1.67 |
| E255V | (R) 0.00 | NA 0.02 | (S) 0.31 | NA 0.26 | (S) 0.64 |
| D276G | (R) 0.46 | (S) 1.07 | NA 1.33 | NA 1.50 | NA 1.95 |
| V299L | NA 0.80 | NA 1.13 | (R) 0.16 | NA 0.00 | (S) 2.89 |
| T315I | (R) 0.04 | (R) 0.00 | (R) 0.00 | (R) 0.00 | (S) 0.95 |
| F317L | (R) 0.23 | (S) 0.61 | (R) 0.11 | NA 0.58 | (S) 1.75 |
| M351T | (R) 0.17 | (S) 1.18 | (S) 1.30 | NA 1.09 | NA 2.77 |
| E355A | (R) 0.26 | NA 1.08 | NA 0.99 | NA 1.22 | (S) 1.50 |
| E355G | (R) 0.22 | NA 0.99 | (S) 0.97 | NA 1.11 | NA 2.34 |
| F359C | (R) 0.05 | NA 0.26 | (S) 1.15 | NA 0.86 | (S) 1.70 |
| F359I | (R) 0.31 | (R) 0.27 | (S) 0.74 | NA 1.59 | (S) 0.80 |
| F359L | (R) 1.11 | NA 1.12 | NA 1.55 | NA 1.67 | NA 2.84 |
| F359V | (R) 0.13 | (R) 0.28 | (S) 0.82 | NA 0.94 | (S) 1.03 |
| H396P | (R) 0.01 | NA 0.23 | NA 0.86 | NA 1.08 | (S) 1.32 |
| H396R | (R) 0.21 | (S) 0.31 | (S) 0.29 | NA 0.44 | NA 1.85 |
| E459K | (R) 0.38 | (S) 1.03 | NA 0.93 | NA 0.78 | (S) 1.59 |
| F486S | (R) 0.01 | NA 0.56 | NA 0.57 | NA 0.52 | NA 1.63 |

Drug

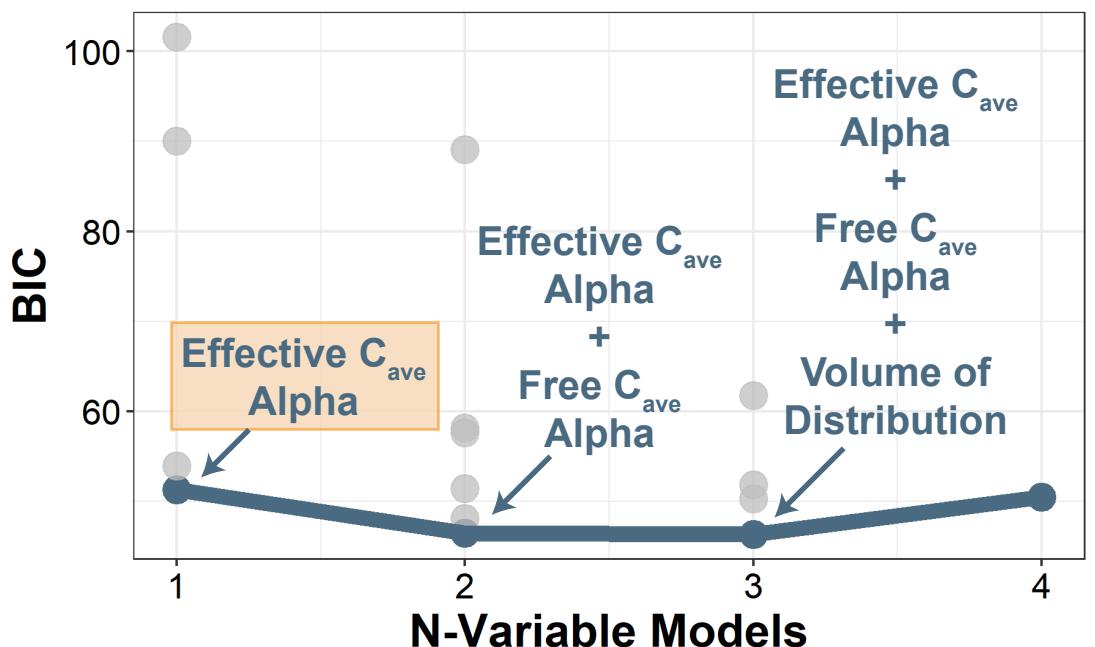
Correct

Incorrect

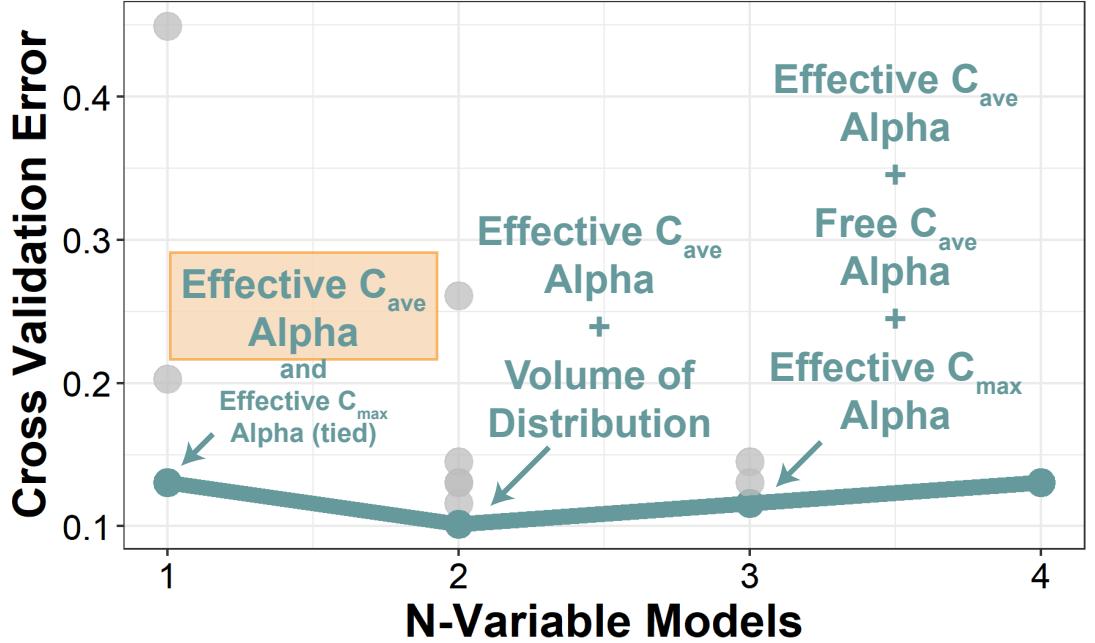
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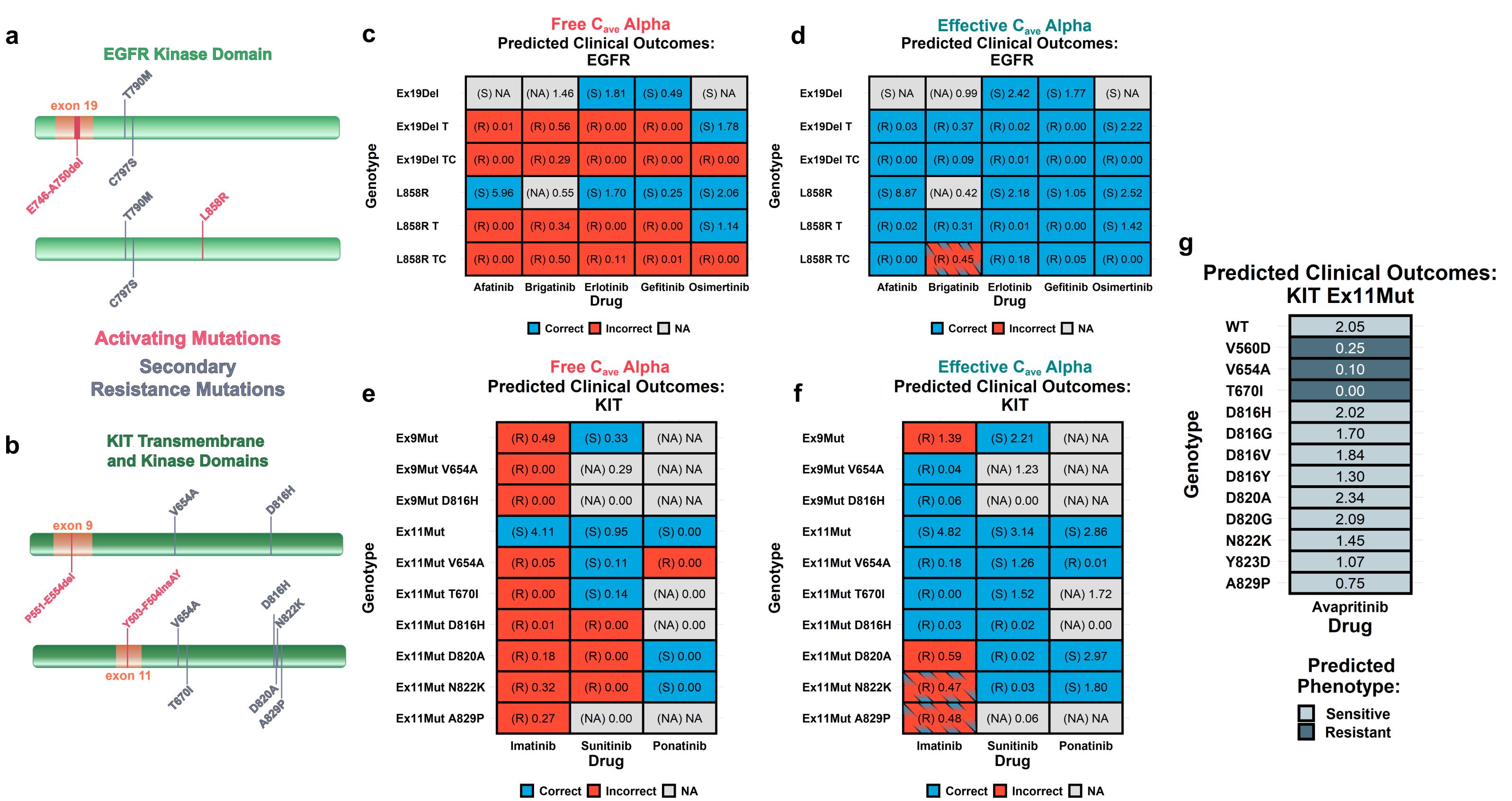
b

Model Selection: BIC

**c**

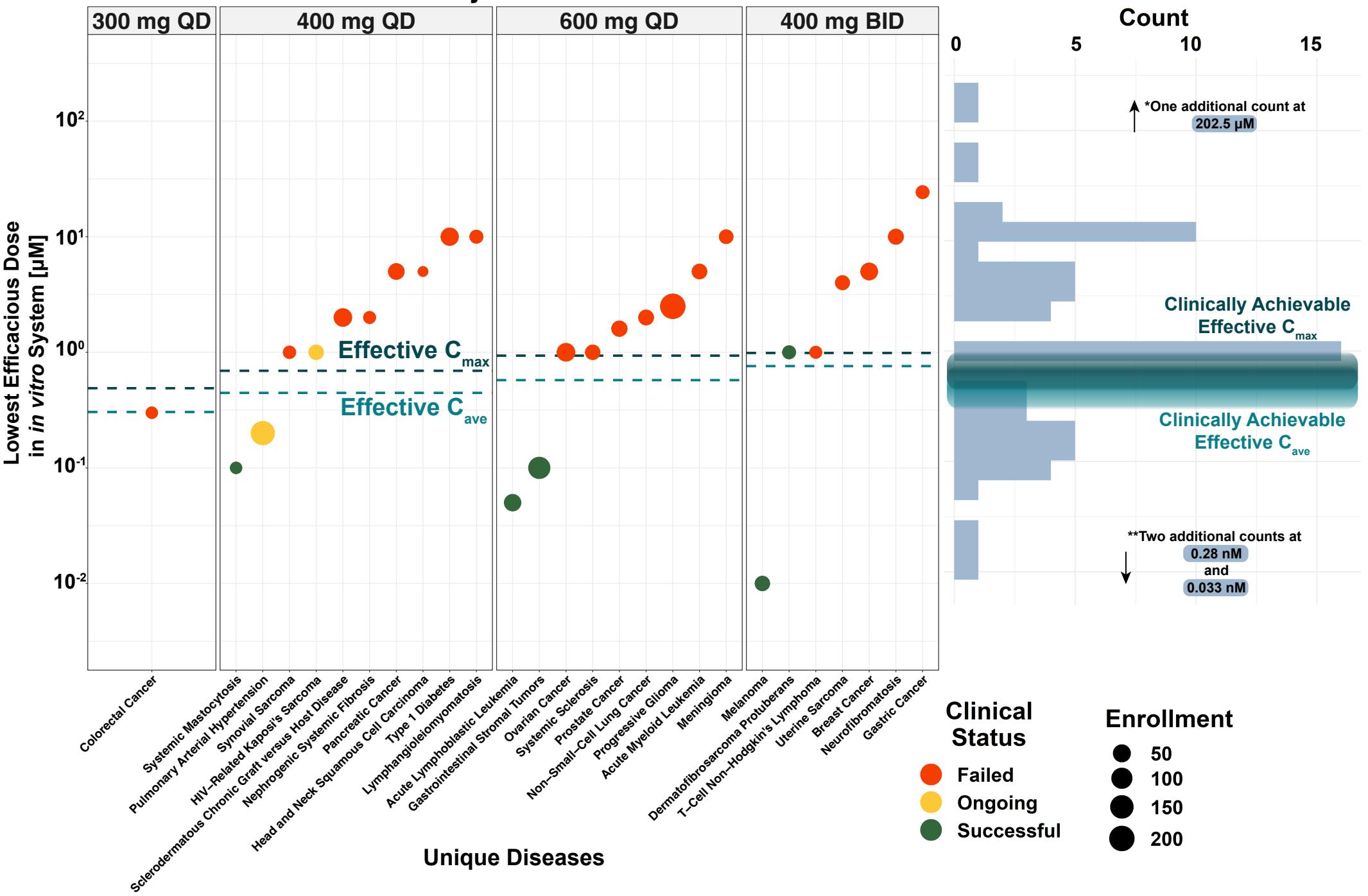
Model Selection: LOOCV





Imatinib Repurposing: Preclinical Efficacy and Clinical Outcomes

a



c

| TKI | Dose | Shift Factor | C _{ave} [nM] | Effective C _{ave} [nM] | C _{max} [nM] | Effective C _{max} [nM] |
|-------------|------------|--------------|-----------------------|---------------------------------|-----------------------|---------------------------------|
| Imatinib | 400 mg QD | 7.6 | 3377 | 444 | 4400 | 579 |
| Nilotinib | 400 mg BID | 21 | 2754 | 131 | 3591 | 171 |
| Dasatinib | 100 mg QD | 2.4 | 27 | 11 | 173 | 72 |
| Bosutinib | 500 mg QD | 1.8 | 287 | 159 | 378 | 210 |
| Ponatinib | 45 mg QD | 3.6 | 101 | 28 | 144 | 40 |
| Erlotinib | 150 mg QD | 7.2 | 4378 | 605 | 4970 | 690 |
| Gefitinib | 250 mg QD | 4.7 | 481 | 103 | 843 | 179 |
| Afatinib | 40 mg QD | 4.9 | 54 | 11 | 78 | 16 |
| Brigatinib | 180 mg QD | 4.5 | 1446 | 321 | 2486 | 552 |
| Osimertinib | 80 mg QD | 12 | 497 | 41 | 624 | 52 |
| Sunitinib | 50 mg QD | 2.2 | 135 | 61 | 181 | 82 |