Figure S2. Sorafenib final covariate pharmacokinetic model equation.

$$\frac{dA1}{dt} = -k_{tr} \cdot A1$$

$$V_i = V_{TV} \cdot e^{\eta 2}$$

$$\frac{dA2}{dt} = k_{tr} \cdot A1 - k_{tr} \cdot A2$$

$$F_1 = \begin{cases} 1 & \text{steady state} \\ \theta_7 & \text{single-dose} \end{cases}$$

$$\frac{dA3}{dt} = k_{tr} \cdot A2 - k_{tr} \cdot A3$$

$$\eta \sim N(0, \omega^2)$$

$$\frac{dA4}{dt} = k_{tr} \cdot A3 - k_{40} \cdot A4$$

$$C_t = \frac{A4}{V_1} \cdot (1 + \epsilon)$$

$$k_{40} = k_e = \frac{CL}{V_1}$$

$$\epsilon \sim N(0, \sigma^2_{nSamples})$$

$$CL_i = CL_{TV} \cdot CL_{cov} \cdot e^{\eta 1}$$

$$\sigma_{nSamples} = \begin{cases} \theta_4 & \text{multiple-observation occasions} \\ \theta_6 & \text{single-observation occasions} \end{cases}$$

$$CL_{cov} = CL_{cov,gender} \cdot CL_{cov,study14295}$$

$$CL_{cov,gender} = (1 + \theta_8 \cdot Gender == female)$$

$$CL_{cov,study14295} = (1 + \theta_9 \cdot Study == 14295)$$