SDC 2. Model-building Process

Base model and univariable analysis	Population model	OFV	ΔOFV
V	V = 0.93 x WT	1854	-
CL base model	CL = 0.039 x WT	1854	-
GA	CL = 0.036 x WT x $(GA/25)^{1.82}$	1852	-2
SCR	CL = 0.041 x WT x $(0.5/SCR)^{0.25}$	1850.4	-3.56
PMA*	CL = 0.038 x WT x $(PMA/30)^{2.45}$	1844	-10
PNA	CL = 0.042 x WT x $(PNA/27)^{0.45}$	1838	-16

CL, clearance; GA, gestational age; OFV, objective function value; PMA, postmenstrual age; PNA, postnatal age; SCR, serum creatinine (mg/dL); V, volume of distribution; wt, weight (kg). *Final model used to optimize dosing.