Table S1. Comparison of Root Mean Squared Error (RMSE) among three models. Probit: probit regresson analysis, Robust probit: robust probit regression analysis using M-estimators, Weibull: nonlinear regression analysis using the CDF of Weibull distribution. All results are present in SupplementalData.zip (model1_parameters_compareRMSE.csv).

		RMSE		
Reaction	Time (min)	Probit	Robust probit	Weibull
Toxic	4	0.111	0.157	0.055
	5	0.149	0.185	0.070
	6	0.206	0.231	0.093
	7	0.178	0.204	0.085
	8	0.166	0.197	0.081
Lethal	4	0.031	0.099	0.016
	5	0.100	0.130	0.053
	6	0.111	0.134	0.059
	7	0.072	0.111	0.037
	8	0.052	0.103	0.027

Table S2. Comparison of TD_{50} or LD_{50} among three models. Probit: probit regresson analysis, Robust probit: robust probit regression analysis using M-estimators, Weibull: nonlinear regression analysis using the CDF of Weibull distribution. Difference and rate were calculated based on probit. All results are present in SupplementalData.zip (model1_parameters_compareD50.csv).

		TD_{50} or LD_{50}			Probit vs. Robust		Probit vs. Weibull	
Reaction	Time (min)	Probit	Robust probit	Weibull	Difference	Rate	Difference	Rate
Toxic	4	58.5	58.4	59.3	-0.106	0.998	-0.795	0.987
	5	52.5	52.3	52.7	-0.194	0.996	-0.178	0.997
	6	51.1	50.9	51.0	-0.141	0.997	0.123	1.002
	7	50.4	50.3	50.3	-0.094	0.998	0.089	1.002
	8	50.0	50.0	49.9	-0.064	0.999	0.079	1.002
Lethal	4	195.8	195.1	199.2	-0.695	0.996	-3.435	0.983
	5	149.9	150.3	151.2	0.427	1.003	-1.323	0.991
	6	134.1	135.0	134.5	0.872	1.006	-0.336	0.998
	7	119.1	119.2	119.4	0.072	1.001	-0.258	0.998
	8	111.0	109.7	111.0	-1.247	0.989	0.027	1.000

Table S3. Mean and 95% confidence interval (CI) of parameters by nonparametric bootstrap analysis using robust probit regression analysis (M-estimators) in toxic (A) and lethal (B) responses. A total of 1000 bootstrap datasets were generated by resampling with replacement from the original dataset. All results are present in SupplementalData.zip (model1_parameters_robust_boot_params.csv).

	Time (min)	μ [95% CI]	σ [95% CI]
Toxic	4	4.067 [4.011, 4.133]	0.292 [0.234, 0.371]
	5	3.949 [3.901, 4.011]	0.289 [0.231, 0.365]
	6	3.919 [3.861, 3.977]	0.305 [0.247, 0.397]
	7	3.907 [3.847, 3.962]	0.311 [0.247, 0.407]
	8	3.899 [3.849, 3.959]	0.296 [0.236, 0.390]
Lethal	4	5.278 [5.208, 5.373]	0.428 [0.334, 0.612]
	5	5.002 [4.920, 5.081]	0.447 [0.360, 0.608]
	6	4.895 [4.790, 4.986]	0.523 [0.398, 0.775]
	7	4.782 [4.619, 4.880]	0.563 [0.414, 0.838]
	8	4.713 [4.508, 4.842]	0.619 [0.444, 0.966]

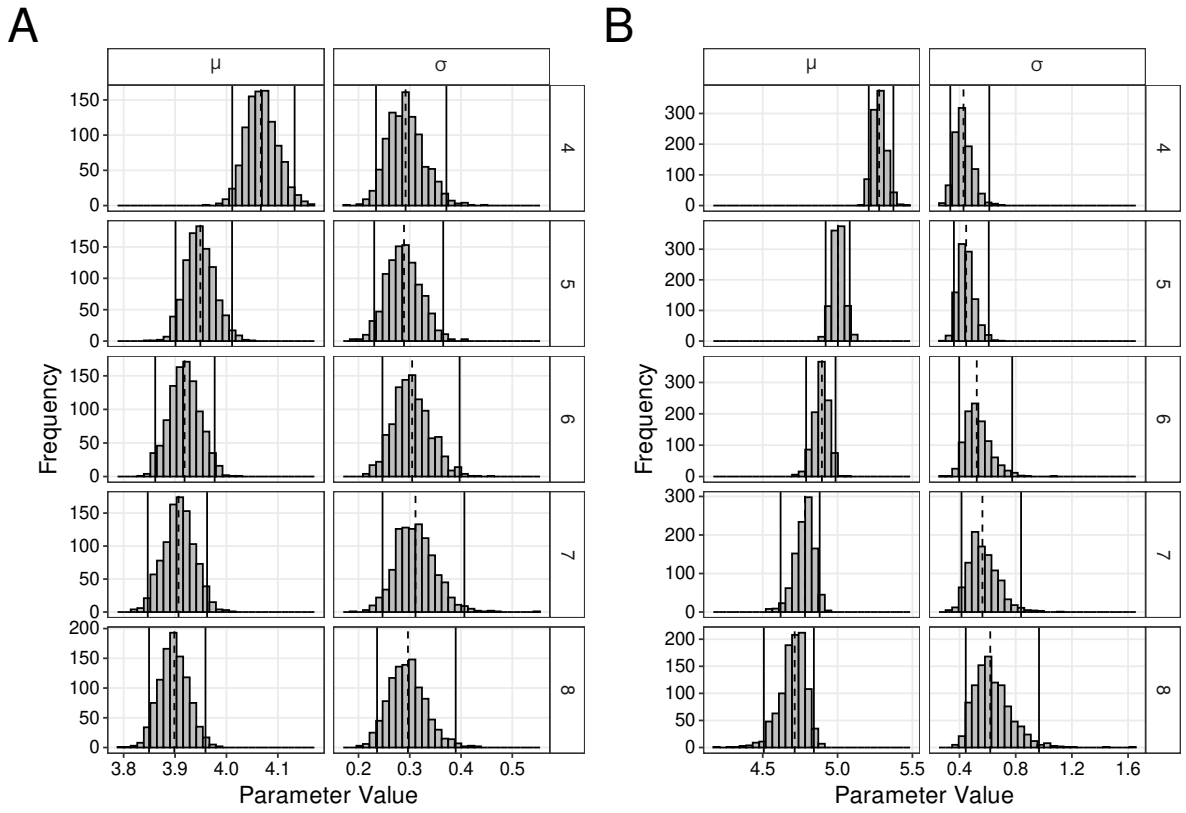

Figure S4. Distribution of parameters by nonparametric bootstrap analysis using robust probit regression analysis (M-estimators) in toxic (A) and lethal (B) responses. A total of 1000 bootstrap datasets were generated by resampling with replacement from the original dataset. Dashed line: estimated value by the original dataset. Solid line: lower and upper limit of 95% confidence interval by the Bias-corrected and accelerated (BCa) method. All results are present in FigS4.zip.