SUPPLEMENTAL TABLE 1

Tariquidar Concentrations in Plasma (µg/mL) of Individual Subjects

	^{11}C-tariquidar						^{11}C-elacridar				
Subject	01	02	03	04	05*	06	07	08	09	10	11
End infusion	1.60	2.56	2.97	2.51	2.77	2.73	2.91	2.21	2.22	2.33	1.61
End scan 1	0.57	0.55	0.74	0.46	0.46	0.39	0.88	0.58	0.38	0.63	0.46
Begin scan 2	0.51	n.d.	0.54	0.36	0.35	0.50	0.61	0.39	0.28	0.63	0.34
End scan 2	0.38	n.d.	0.41	0.46	0.31	0.46	0.54	0.64	0.30	0.77	0.52
AUC ($\mu g \cdot h \cdot mL^{-1}$)	1.93	n.d.	2.78	2.18	2.24	2.38	2.99	2.25	1.82	2.65	1.76

AUC = area under the concentration time-curve; n.d. = not determined.

*Excluded from PET data analysis due to lack of input function.

SUPPLEMENTAL TABLE 2

Outcome Parameters for Whole-Brain Gray Matter of the 1T2K and 2T4K* Models for ^{11}C-Tariquidar and ^{11}C-Elacridar Using Plasma Input Function Corrected for Polar Radiolabeled Metabolites

	1T2K		2T4K	
	^{11}C-tariquidar	^{11}C-elacridar	^{11}C-tariquidar	^{11}C-elacridar
K_1 (mL·mL^{-1}·min^{-1})	0.003 ± 0.002 (0.002–0.005)	0.003 ± 0.001 (0.002–0.004)	0.004 ± 0.001 (0.003–0.004)	0.005 ± 0.001 (0.004–0.006)
k_2 (min^{-1})	0.012 ± 0.003 (0.009–0.014)	0.012 ± 0.003 (0.009–0.015)	0.081 ± 0.022 (0.062–0.100)	0.118 ± 0.022 (0.096–0.139)
k_3 (min^{-1})			0.096 ± 0.025 (0.074–0.117)	0.107 ± 0.042 (0.065–0.148)
k_4 (min^{-1})			0.012 ± 0.008 (0.006–0.019)	0.013 ± 0.007 (0.006–0.019)
V_T (mL·mL^{-1})	0.27 ± 0.07 (0.22–0.33)	0.27 ± 0.10 (0.17–0.36)	0.54 ± 0.24 (0.33–0.75)	0.47 ± 0.12 (0.36–0.58)
V_b	0.050 ± 0.008 (0.042–0.057)	0.045 ± 0.003 (0.043–0.048)	0.046 ± 0.006 (0.041–0.051)	0.041 ± 0.004 (0.037–0.045)
AIC	-31.7 ± 8.4	-31.4 ± 9.3	-42.5 ± 6.4	-49.5 ± 2.0

*Data from 0 to 60 min was used for analysis.

Outcome parameters are given as mean ± SD (^{11}C-tariquidar: $n = 5$, ^{11}C-elacridar: $n = 4$, subject 10 excluded). In parentheses the 95% confidence intervals of the mean parameter estimates are given. K_1, k_2, k_3, k_4 = rate constants for exchange of radioactivity between plasma and brain compartments; V_T = distribution volume; V_b = blood volume fraction in brain; AIC = Akaike information criterion.
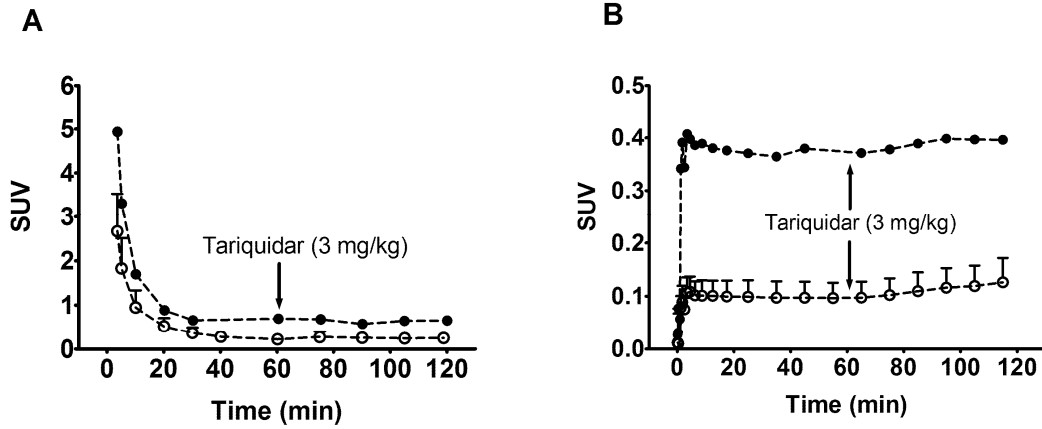
SUPPLEMENTAL TABLE 3

Single Nucleotide Polymorphisms in the *ABCG2* and *ABCB1*

Genes of Individual Subjects

| Subject | *ABCG2* | | *ABCB1* | |
	C421A	C1236T	G2677T	C3435T
01	0	0	0	1
02	0	0	0	0
03	0	0	0	0
04	n.d.	n.d.	n.d.	n.d.
05*	0	0	0	0
06	1	1	2	1
07	1	0	0	1
08	1	0	0	0
09	0	0	0	1
10	0	2	2	2
11	0	2	2	1

n.d. = not determined; 0 = wild-type; 1 = heterozygous

mutant; 2 = homozygous mutant.

*Excluded from PET data analysis due to lack of input function.

SUPPLEMENTAL FIGURE 1. Mean (+SD) time–activity curves of ^{11}C-elacridar ($\bigcirc$, n = 4, subject 10 not included) and individual time–activity curves of subject 10 ($\bullet$) in arterial plasma, uncorrected for radiolabeled metabolites (A), and in whole-brain gray matter, corrected for radioactivity in vasculature (B). The start of intravenous tariquidar infusion (3 mg/kg, over 30 min) is indicated by an arrow.
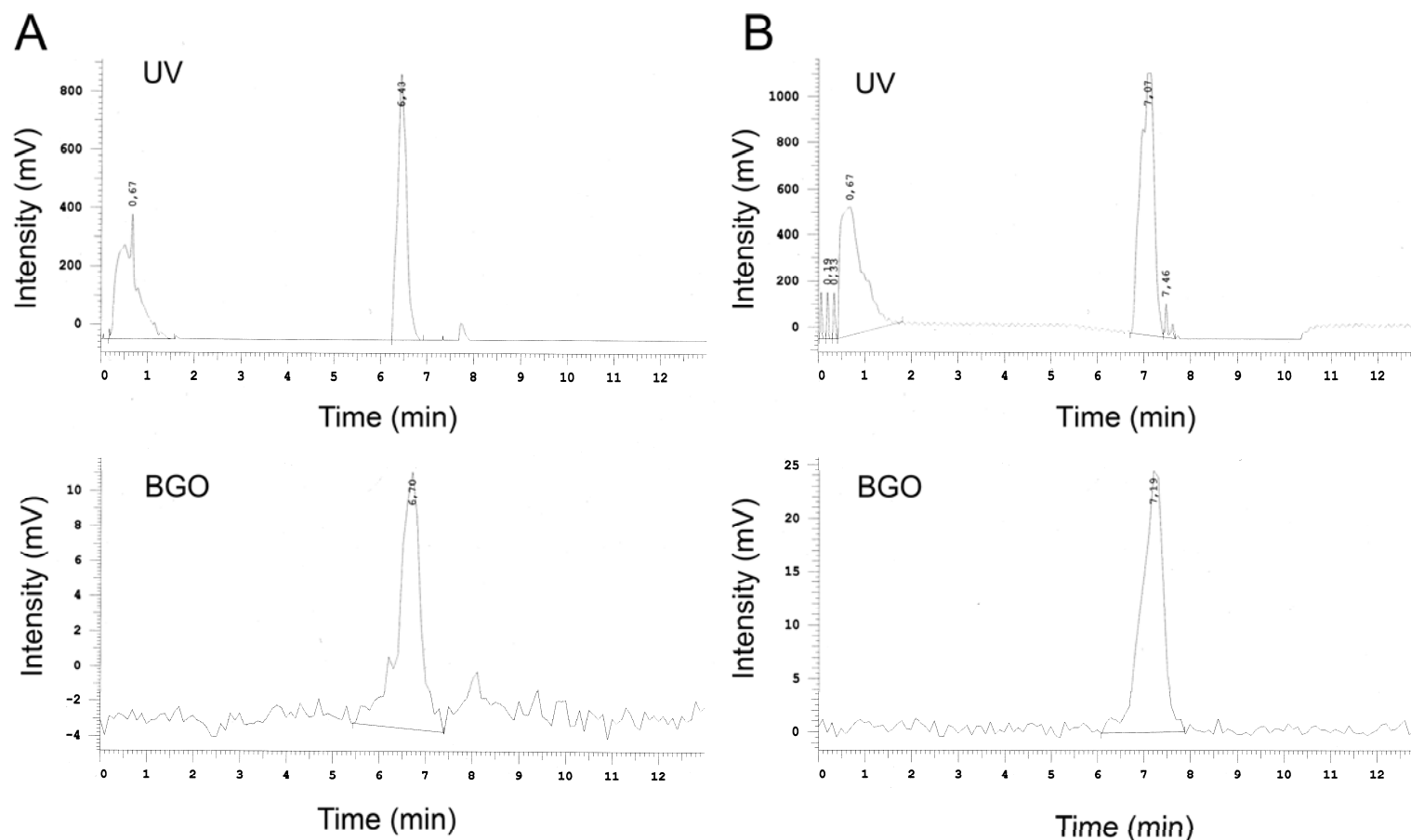
SUPPLEMENTAL FIGURE 2. Representative radio-HPLC chromatograms of methanol/buffer eluates obtained from solid-phase extraction assay of plasma samples collected at 30 min after intravenous injection of ^{11}C-tariquidar (A) or ^{11}C-elacridar (B). A Chromolith Performance RP-18e (100-4.6 mm) HPLC column (Merck) was eluted at a flow rate of 4 mL/min with aqueous ammonium acetate buffer (0.2 M, pH 5.0, solvent A) and acetonitrile (solvent B) using the following binary gradient: 0–4 min, 20% B; 4–9 min, 20%–53% B; 9.1 min, 20% B; 9.1–13 min, 20% B. Ultraviolet (UV) detection was performed at a wavelength of 227 nm, and injected volume was 2 mL. The upper channel represents UV detection and the lower channel radioactivity detection (bismuth germanate, BGO). Samples were spiked with unlabeled tariquidar or elacridar.