

Pharmacokinetics of albendazole, albendazole sulfoxide and albendazole sulfone determined from plasma, blood, dried blood spots and Mitra[®] samples of hookworm-infected adolescents

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Table S1. Gradient elution of liquid chromatography.

Time [min]	Mobile phase B [%]	Flow rate [mL/min]	Column
0.00	2	0.3	Trapping system
1.50	70	0.3	
1.51	70	0.6	Main column
3.00	70	0.7	
5.50	95	0.7	
6.00	95	0.7	
6.20	70	0.7	
7.20	70	0.7	
7.21	2	1	Trapping system
8.20	2	1	

Table S2. Fragment specific mass spectrometry parameters of albendazole (ALB), albendazole sulfoxide (ALBOX), albendazole sulfone (ALBON) and deuterated ALB (ALB-d₃).

Parameter	Product ion 234	Product ion 240	Product ion 159	Product ion 234
	ALB	ALBOX	ALBON	ALB-d ₃
Dwell	10	50	50	50
Fragmentor voltage	99	90	90	90
Collision Energy	20	12	40	20
Cell accelerator voltage	5	5	5	5

Table S3. Stability of albendazole (ALB), albendazole sulfone (ALBON) and albendazole sulfoxide (ALBOX) in plasma, blood, DBS and Mitra®.

Condition	Matrix	Analyte	C _{nominal} [ng/mL]	C _ø [ng/mL]	Accuracy ± CV [%]	
Room temperature (4 h, extracted)	Plasma extracted	ALB	5	4.64	92.8 ± 0.81	
			100	99.6	99.6 ± 0.91	
			150	159	106 ± 0.56	
		ALBON	5	4.68	93.6 ± 6.11	
			100	100	100 ± 1.07	
			150	164	109 ± 1.81	
			ALBOX	10	9.76	97.6 ± 4.15
				500	505	101 ± 0.63
				750	746	99.5 ± 2.95
	Blood extracted	ALB	5	4.67	93.4 ± 1.08	
			100	96.6	96.6 ± 1.80	
			150	141	93.8 ± 4.36	
		ALBON	5	5.00	100 ± 2.01	
			100	102	102 ± 3.53	
			150	140	93.6 ± 5.77	
ALBOX			10	10.1	101 ± 1.09	
			500	496	99.1 ± 3.54	
			750	691	92.1 ± 5.34	
Room temperature (2 months)	DBS	ALB	10	9.59	95.9 ± 3.94	
			100	105	105 ± 5.88	
			150	153	102 ± 5.78	
		ALBON	5	5.04	101 ± 5.43	
			100	104	104 ± 6.71	
			150	162	108 ± 3.88	
			ALBOX	10	10.7	107 ± 1.77
				500	504	101 ± 2.56
				750	759	101 ± 6.49
	Mitra®	ALB	10	10.0	100 ± 3.23	
			100	101	101 ± 3.69	
			150	148	98.8 ± 1.88	
		ALBON	5	5.01	100 ± 5.01	
			100	104	104 ± 5.14	
			150	146	97.1 ± 4.02	
ALBOX			10	9.83	98.3 ± 4.81	
			500	485	97.1 ± 4.55	
			750	732	97.6 ± 4.94	
4 °C (72 h, extracted)	Plasma	ALB	5	4.97	99.4 ± 4.43	
			100	100	100 ± 1.25	
			150	153	102 ± 1.73	
		ALBON	5	4.91	98.3 ± 2.36	
			100	95.0	95.0 ± 2.35	
			150	153	102 ± 4.35	
			ALBOX	10	11.0	110 ± 4.14
				500	483	96.6 ± 3.85
				750	725	96.7 ± 4.78

	Blood	ALB	5	5.17	103 ± 4.48
			100	100	100 ± 1.89
			150	158	105 ± 1.26
		ALBON	5	5.01	100 ± 4.81
			100	100	100 ± 1.82
			150	166	110 ± 1.59
		ALBOX	10	9.85	98.5 ± 4.44
			500	517	103 ± 3.39
			750	821	109 ± 2.23
	DBS	ALB	10	10.3	103 ± 6.54
			100	97.6	97.6 ± 5.93
			150	144	96.0 ± 6.60
		ALBON	5	5.29	106 ± 7.17
			100	97.8	97.8 ± 4.01
			150	158	105 ± 4.63
		ALBOX	10	10.6	106 ± 7.70
			500	482	96.4 ± 3.53
			750	771	103 ± 3.58
Mitra [®]	ALB	10	9.34	93.4 ± 3.88	
		100	99.0	99.0 ± 7.70	
		150	146	97.3 ± 4.14	
	ALBON	5	4.85	97.1 ± 3.74	
		100	99.7	99.7 ± 2.85	
		150	159	106 ± 0.99	
	ALBOX	10	10.4	104 ± 6.44	
		500	508	102 ± 1.52	
		750	785	105 ± 1.06	
-80 °C (2–3 months)	Plasma	ALB	5	4.35	87.0 ± 0.89
			100	105	105 ± 1.76
			150	161	107 ± 3.65
		ALBON	5	4.50	90.0 ± 1.23
			100	101	101 ± 2.83
			150	152	101 ± 4.44
		ALBOX	10	10.2	102 ± 3.32
			500	479	95.8 ± 2.34
			750	705	94.0 ± 2.59
	Blood	ALB	5	4.86	97.2 ± 2.05
			100	102	102 ± 5.49
			150	163	109 ± 6.01
		ALBON	5	4.76	95.2 ± 3.69
			100	109	109 ± 5.72
			150	165	110 ± 3.95
		ALBOX	10	10.7	107 ± 3.71
			500	537	107 ± 3.60
			750	795	106 ± 2.91
DBS	ALB	10	9.89	98.9 ± 1.95	
		100	101	101 ± 7.83	
		150	150	99.9 ± 6.68	
	ALBON	5	4.64	92.7 ± 4.80	

			100	97.2	97.2 ± 4.14		
			150	145	96.5 ± 5.24		
		ALBOX	10	9.72	97.2 ± 3.85		
			500	499	99.9 ± 8.04		
			750	754	100 ± 7.79		
	Mitra®	ALB	10	10.0	100 ± 3.14		
			100	98.7	98.7 ± 3.73		
			150	152	101 ± 2.89		
		ALBON	5	5.00	100 ± 3.23		
			100	96.5	96.5 ± 4.78		
			150	155	103 ± 4.23		
		ALBOX	10	10.2	102 ± 5.20		
			500	516	103 ± 4.86		
			750	770	103 ± 5.40		
Freeze/thaw cycles (3x)	Plasma	ALB	5	4.87	97.5 ± 2.11		
			100	101	101 ± 0.94		
			150	162	108 ± 0.36		
			ALBON	5	4.83	96.6 ± 5.96	
				100	99.0	99.0 ± 3.41	
				150	166	110 ± 2.37	
			ALBOX	10	9.03	90.3 ± 7.56	
				500	476	95.1 ± 4.17	
				750	758	101 ± 2.48	
	Blood	ALB	5	4.66	93.3 ± 2.87		
			100	101	101 ± 1.59		
			150	153	102 ± 1.11		
				ALBON	5	5.30	106 ± 0.93
					100	106	105 ± 2.02
					150	167	111 ± 7.21
			ALBOX	10	10.4	104 ± 7.68	
				500	501	100 ± 1.03	
				750	787	105 ± 5.75	
DBS	ALB	10	9.90	99.0 ± 1.91			
		100	106	106 ± 8.14			
		150	157	105 ± 6.51			
			ALBON	5	4.79	95.7 ± 1.58	
				100	98.8	98.8 ± 2.26	
				150	150	100 ± 8.76	
			ALBOX	10	10.1	101 ± 3.30	
				500	477	95.3 ± 4.11	
				750	712	94.9 ± 6.07	