

**Supporting information 1 Table:** List of sequences used for the molecular phylogenetic analysis and respective accession numbers (GenBank or Ensembl).

Species	Gene	Accession number
<i>A. carolinensis</i>	CPT1A	XP_003214835.1
	CPTC	XP_003222743.1
	CPT1B	ENSACAP00000001055
<i>C. intestinalis</i>	CPT1	ENSCINP00000007072
<i>C. milii</i>	CPT1C	AGD98733.1
<i>D. melanogaster</i>	CPT1	CAB52415.1
<i>D. rerio</i>	CPT1Aa	XP_002666893.2
	CPT1Ab	XP_005166530.1
	CPT1Ca	XP_005164116.1
	CPT1Cb	XP_002666747.2
	CPT1B	XP_005159068.1
<i>F. peregrinus</i>	CPT1A	XP_005236351.1
	CPT1B	XP_005243516.1
<i>G. aculeatus</i>	CPT1A	ENSGACP00000014767
	CPT1Ca	ENSGACP00000010584
	CPT1Cb	ENSGACP00000008742
	CPT1B	ENSGACP00000016316
<i>G. gallus</i>	CPT1A	NP_001012916.1
<i>H. sapiens</i>	CPT1A	NP_001867.2
	CPT1B	NP_689451.1
	CPT1C	NP_001186681.1
<i>L. chalumnae</i>	CPT1A	ENSLACP00000021346
	CPT1C	ENSLACP00000014661
	CPT1B	ENSLACP00000008053
<i>L. erinacea</i>	CPT1A	KF570112
	CPT1C	KF570111

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<i>M. domestica</i>	CPT1A	XP_001363149.1
	CPT1B	XP_001366412.1

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<i>M. musculus</i>	CPT1A	NP_038523.2
	CPT1B	NP_034078.2
	CPT1C	NP_710146.1

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<i>O. latipes</i>	CPT1Ca	XP_004080367.1
	CPT1Cb	XP_004071913.1
	CPT1B	XP_005470933.1

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<i>O. niloticus</i>	CPT1A	XP_003440402.1
	CPT1Ca	XP_003438524.2
	CPT1Cb	XP_003446513.1
	CPT1B	XP_005470933.1

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<i>T. nigroviridis</i>	CPT1A	CAG01138.1
	CPT1C	CAG07569.1
	CPT1B	CAG11364.1

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<i>X. tropicalis</i>	CPT1A	XP_004913492.1
	CPT1C	NP_001107300.1
	CPT1B	NP_001072766.1

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<i>S. scrofa</i>	CPT1C	XP_005664799.1
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<i>T. rubripes</i>	CPT1A	XP_003967444.1
	CPT1Ca	XP_003961459.1
	CPT1Cb	XP_003964428.1
	CPT1B	XP_003967147.1

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<i>T. fulvidraco</i>	CPT1Aa	AFO11024.1
	CPT1Ab	AFO11025.1

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