

# Supplementary Material

Pecoraro et al. Canning processes reduce DNA-based traceability of commercial tropical tunas

Table S3: Summary information of the samples used in this study and their molecular identification results. Morph. ID = Morphological identification for the four species (*Thunnus albacares* = YFT; *Thunnus obesus* = BET; *Katsuwonus pelamis* = SKJ; *Thunnus tonggol* = LOT;) achieved at the canneries; Ocean (Indian Ocean = IO; Atlantic Ocean = AO; Western-Central Pacific Ocean = WCPO; Eastern Pacific Ocean = EPO); amplified fragment of the of the mitochondrial gene Cytochrome b (AB, A, B); Blast ID = species genetically identified in GenBank (www.ncbi.nlm.nih.gov) using the BLASTn search tool; % Similarity = genetic similarity in GenBank; Accession number of the species genetically identified in GenBank.

Morph. ID	Ocean	Level	Specimen	Fragment	Blast ID	% Similarity	Accession number
YFT	AO	L1	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	AO	L2	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	AO	L3	1	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	AO	L4B	1	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
YFT	AO	L4O	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
YFT	AO	L1	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	AO	L2	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	AO	L3	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	AO	L4B	2	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
YFT	AO	L4O	2	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
YFT	AO	L1	3	AB	<i>Thunnus albacares</i>	98.31%	KX755269.1
YFT	AO	L2	3	AB	<i>Thunnus albacares</i>	98.31%	MG017682.1
YFT	AO	L3	3	-	-	-	-
YFT	AO	L4B	3	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
YFT	AO	L4O	3	B	<i>Thunnus albacares</i>	99.08%	MG017686.1
YFT	EPO	L1	1	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L2	1	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L3	1	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L4B	1	B	<i>Katsuwonus pelamis</i> , <i>Thunnus albacares</i> , <i>Thunnus obesus</i>	96.33%	KP669132.1, MG017683.1, KJ018958.1
YFT	EPO	L4O	1	B	<i>Thunnus albacares</i>	98.17%	MG017683.1
YFT	EPO	L1	2	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L2	2	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L3	2	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L4B	2	B	<i>Katsuwonus pelamis</i>	99.08%	KP669132.1
YFT	EPO	L4O	2	B	<i>Thunnus albacares</i>	98.17%	MG017683.1
YFT	EPO	L1	3	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L2	3	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L3	3	AB	<i>Thunnus albacares</i>	99.15%	MG017682.1
YFT	EPO	L4B	3	B	<i>Thunnus albacares</i>	97.25%	MG017683.1
YFT	EPO	L4O	3	B	<i>Thunnus albacares</i>	98.17%	MG017683.1
YFT	IO	L1	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L2	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L3	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L4B	1	B	<i>Thunnus albacares</i>	99.08%	MG017683.1
YFT	IO	L4O	1	B	<i>Katsuwonus pelamis</i>	98.17%	KP669172.1
YFT	IO	L1	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L2	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L3	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L4B	2	B	<i>Thunnus albacares</i> , <i>T.obesus</i>	97.25%	MG017683.1, MG017696.1
YFT	IO	L4O	2	B	<i>Thunnus albacares</i>	99.08%	MG017683.1
YFT	IO	L1	3	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L2	3	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L3	3	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	IO	L4B	3	B	<i>Katsuwonus pelamis</i>	99.08%	KP669172.1
YFT	IO	L4O	3	B	<i>Thunnus albacares</i>	99.08%	MG017686.1

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Morph. ID	Ocean	Level	Specimen	Fragment	Blast ID	% Similarity	Accession number
YFT	WCPO	L1	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L2	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L3	1	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L4B	1	B	<i>Katsuwonus pelamis</i>	99.08%	KP669132.1
YFT	WCPO	L4O	1	B	<i>Thunnus albacares</i>	99.08%	MG017683.1
YFT	WCPO	L1	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L2	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L3	2	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L4B	2	B	<i>Thunnus albacares</i>	99.08%	MG017683.1
YFT	WCPO	L4O	2	B	<i>Thunnus albacares</i>	99.08%	MG017683.1
YFT	WCPO	L1	3	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L2	3	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L3	3	AB	<i>Thunnus albacares</i>	99.58%	MG017682.1
YFT	WCPO	L4B	3	B	<i>Thunnus albacares, T.obesus</i>	97.25%	MG017683.1, KJ018958.1
YFT	WCPO	L4O	3	B	<i>Thunnus albacares</i>	99.08%	MG017686.1
BET	EPO	L1	1	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	EPO	L2	1	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	EPO	L3	1	A	<i>Thunnus obesus</i>	99.14%	MG017697.1
BET	EPO	L4B	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	EPO	L4O	1	B	<i>Thunnus obesus</i>	98.17%	MG017697.1
BET	EPO	L1	2	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	EPO	L2	2	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	EPO	L3	2	A	<i>Thunnus obesus</i>	99.14%	MG017697.1
BET	EPO	L4B	2	B	<i>Thunnus obesus</i>	98.17%	MG017697.1
BET	EPO	L4O	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	EPO	L1	3	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	EPO	L2	3	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	EPO	L3	3	A	<i>Thunnus obesus</i>	98.28%	MG017697.1
BET	EPO	L4B	3	B	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
BET	EPO	L4O	3	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	IO	L1	1	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	IO	L2	1	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	IO	L3	1	A	<i>Thunnus obesus</i>	99.15%	MG017697.1
BET	IO	L4B	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	IO	L4O	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	IO	L1	2	AB	<i>Thunnus obesus</i>	99.15%	MG017695.1
BET	IO	L2	2	AB	<i>Thunnus obesus</i>	99.15%	MG017697.1
BET	IO	L3	2	A	<i>Thunnus obesus</i>	99.15%	MG017697.1
BET	IO	L4B	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	IO	L4O	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	IO	L1	3	AB	<i>Thunnus obesus</i>	98.73%	MG017695.1
BET	IO	L2	3	AB	<i>Thunnus obesus</i>	98.73%	MG017695.1
BET	IO	L3	3	A	<i>Thunnus obesus</i>	99.15%	MG017697.1
BET	IO	L4B	3	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
BET	IO	L4O	3	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	AO	L1	1	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	AO	L2	1	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	AO	L3	1	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	AO	L4B	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	AO	L4O	1	A	<i>Katsuwonus pelamis</i>	100.00%	KJ617313.1
SKJ	AO	L1	2	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669130.1
SKJ	AO	L2	2	AB	<i>Katsuwonus pelamis</i>	99.15%	KP669130.1
SKJ	AO	L3	2	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669130.1
SKJ	AO	L4B	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	AO	L4O	2	B	<i>Katsuwonus pelamis</i>	97.25%	KP669132.1

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Morph. ID	Ocean	Level	Specimen	Fragment	Blast ID	% Similarity	Accession number
SKJ	AO	L1	3	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	AO	L2	3	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	AO	L3	3	-	-	-	-
SKJ	AO	L4B	3	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
SKJ	AO	L4O	3	B	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
SKJ	EPO	L1	1	AB	<i>Katsuwonus pelamis</i>	100.00%	KJ617298.1
SKJ	EPO	L2	1	AB	<i>Katsuwonus pelamis</i>	100.00%	KJ617298.1
SKJ	EPO	L3	1	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	EPO	L4B	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	EPO	L4O	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	EPO	L1	2	AB	<i>Katsuwonus pelamis</i>	98.31%	KP669130.1
SKJ	EPO	L2	2	AB	<i>Katsuwonus pelamis</i>	98.31%	KP669130.1
SKJ	EPO	L3	2	AB	<i>Katsuwonus pelamis</i>	96.19%	KP669130.1
SKJ	EPO	L4B	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	EPO	L4O	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	EPO	L1	3	AB	<i>Katsuwonus pelamis</i>	99.15%	KP669172.1
SKJ	EPO	L2	3	AB	<i>Katsuwonus pelamis</i>	99.15%	KP669172.1
SKJ	EPO	L3	3	AB	<i>Katsuwonus pelamis</i>	100.00%	KJ617298.1
SKJ	EPO	L4B	3	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
SKJ	EPO	L4O	3	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
SKJ	IO	L1	1	AB	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
SKJ	IO	L2	1	AB	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
SKJ	IO	L3	1	AB	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
SKJ	IO	L4B	1	B	<i>Katsuwonus pelamis</i>	97.25%	KP669132.1
SKJ	IO	L4O	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	IO	L1	2	AB	<i>Katsuwonus pelamis</i>	99.15%	KP669170.1
SKJ	IO	L2	2	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	IO	L3	2	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	IO	L4B	2	-	-	-	-
SKJ	IO	L4O	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	IO	L1	3	AB	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
SKJ	IO	L2	3	AB	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
SKJ	IO	L3	3	AB	<i>Katsuwonus pelamis</i>	100.00%	AB098093.1
SKJ	IO	L4B	3	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
SKJ	IO	L4O	3	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
SKJ	WCPO	L1	1	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	WCPO	L2	1	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	WCPO	L3	1	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669130.1
SKJ	WCPO	L4B	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	WCPO	L4O	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	WCPO	L1	2	AB	<i>Katsuwonus pelamis</i>	99.15%	KP669130.1
SKJ	WCPO	L2	2	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669130.1
SKJ	WCPO	L3	2	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669130.1
SKJ	WCPO	L4B	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
SKJ	WCPO	L4O	2	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1
SKJ	WCPO	L1	3	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	WCPO	L2	3	AB	<i>Katsuwonus pelamis</i>	99.58%	KP669170.1
SKJ	WCPO	L3	3	AB	<i>Katsuwonus pelamis</i>	99.15%	AB098096.1
SKJ	WCPO	L4B	3	B	<i>Katsuwonus pelamis</i>	99.08%	KP669132.1
SKJ	WCPO	L4O	3	B	<i>Katsuwonus pelamis</i>	100.00%	KP669132.1

# Supplementary Material

Morph. ID	Ocean	Level	Specimen	Fragment	Blast ID	% Similarity	Accession number
LOT	IO	L1	1	AB	<i>Thunnus tonggol, thunnus atlanticus</i>	98.73%	KM055411.1, MG017704.1
LOT	IO	L2	1	AB	<i>Thunnus tonggol, thunnus atlanticus</i>	98.73%	KM055411.1, MG017704.1
LOT	IO	L3	1	A	<i>Thunnus tonggol</i>	98.29%	KF777796.1
LOT	IO	L4B	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
LOT	IO	L4O	1	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
LOT	IO	L1	2	AB	<i>Thunnus tonggol</i>	98.73%	KM055411.1
LOT	IO	L2	2	AB	<i>Thunnus tonggol</i>	98.73%	KM055411.1
LOT	IO	L3	2	AB	<i>Thunnus thynnus, Thunnus albacares</i>	98.73%	MG017705.1, MG017687.1
LOT	IO	L4B	2	B	<i>Thunnus obesus</i>	98.17%	MG017696.1
LOT	IO	L4O	2	B	<i>Thunnus tonggol, Thunnus thynnus</i>	99.08%	MG017702.1, MG017705.1
LOT	IO	L1	3	AB	<i>Thunnus tonggol, thunnus atlanticus</i>	98.31%	KM055411.1, MG017704.1
LOT	IO	L2	3	AB	<i>Thunnus thynnus, Thunnus albacares</i>	98.73%	MG017705.1, MG017687.1
LOT	IO	L3	3	AB	<i>Thunnus thynnus, Thunnus albacares</i>	98.73%	MG017705.1, MG017687.1
LOT	IO	L4B	3	B	<i>Thunnus tonggol, Thunnus thynnus</i>	99.08%	MG017702.1, MG017705.1
LOT	IO	L4O	3	B	<i>Thunnus tonggol, Thunnus thynnus</i>	99.08%	MG017702.1, MG017705.1