

## Supplementary information

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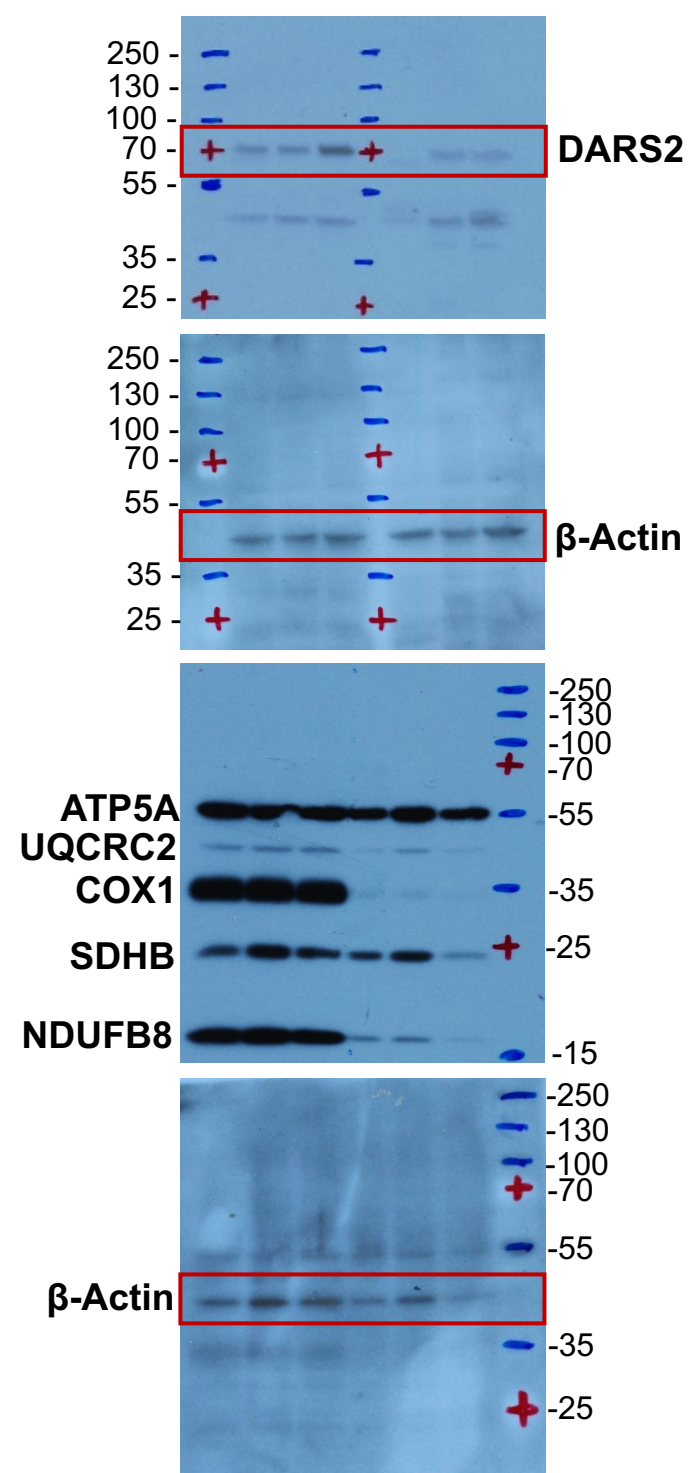
# Mitochondrial dysfunction abrogates dietary lipid processing in enterocytes

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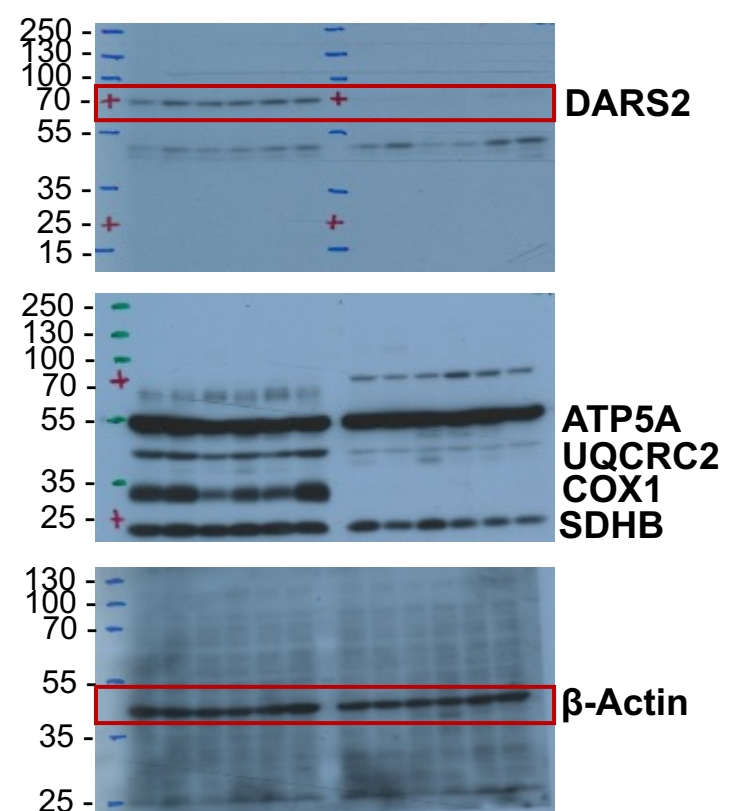
In the format provided by the  
authors and unedited

# Supplementary Figure 1

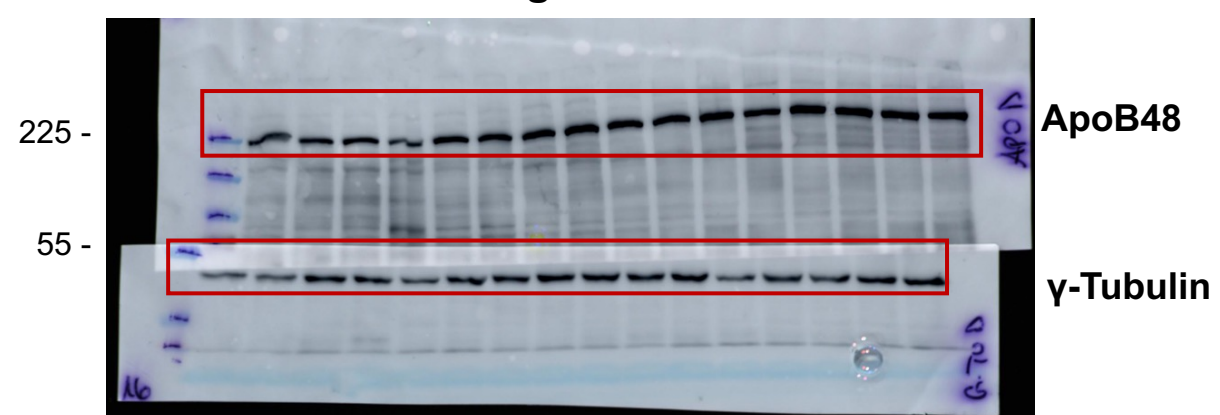
## Figure 1c



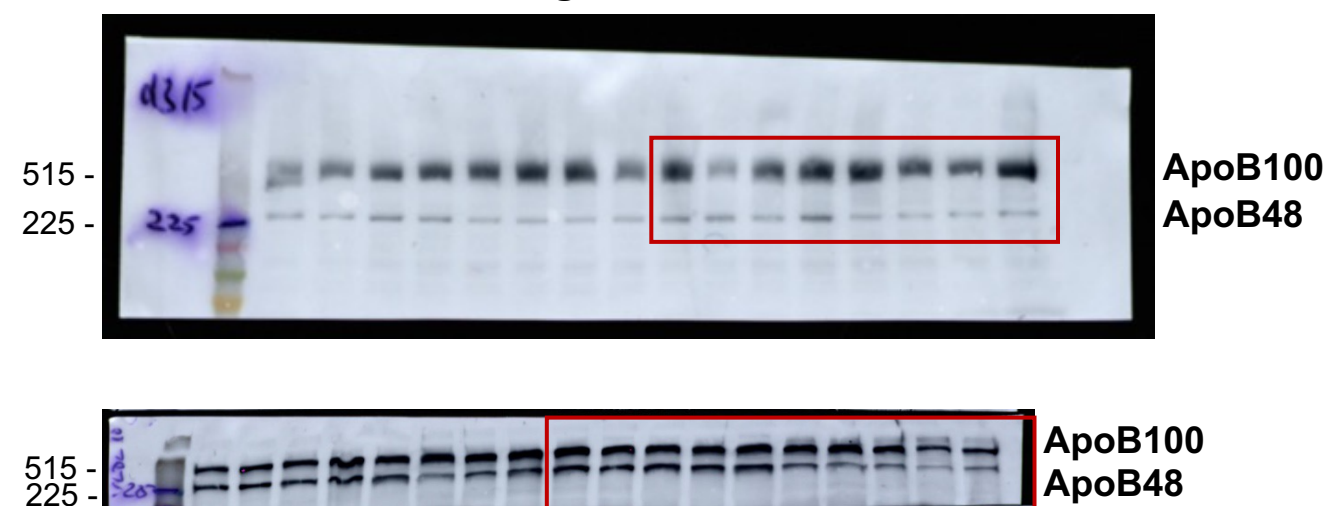
## Figure 2b

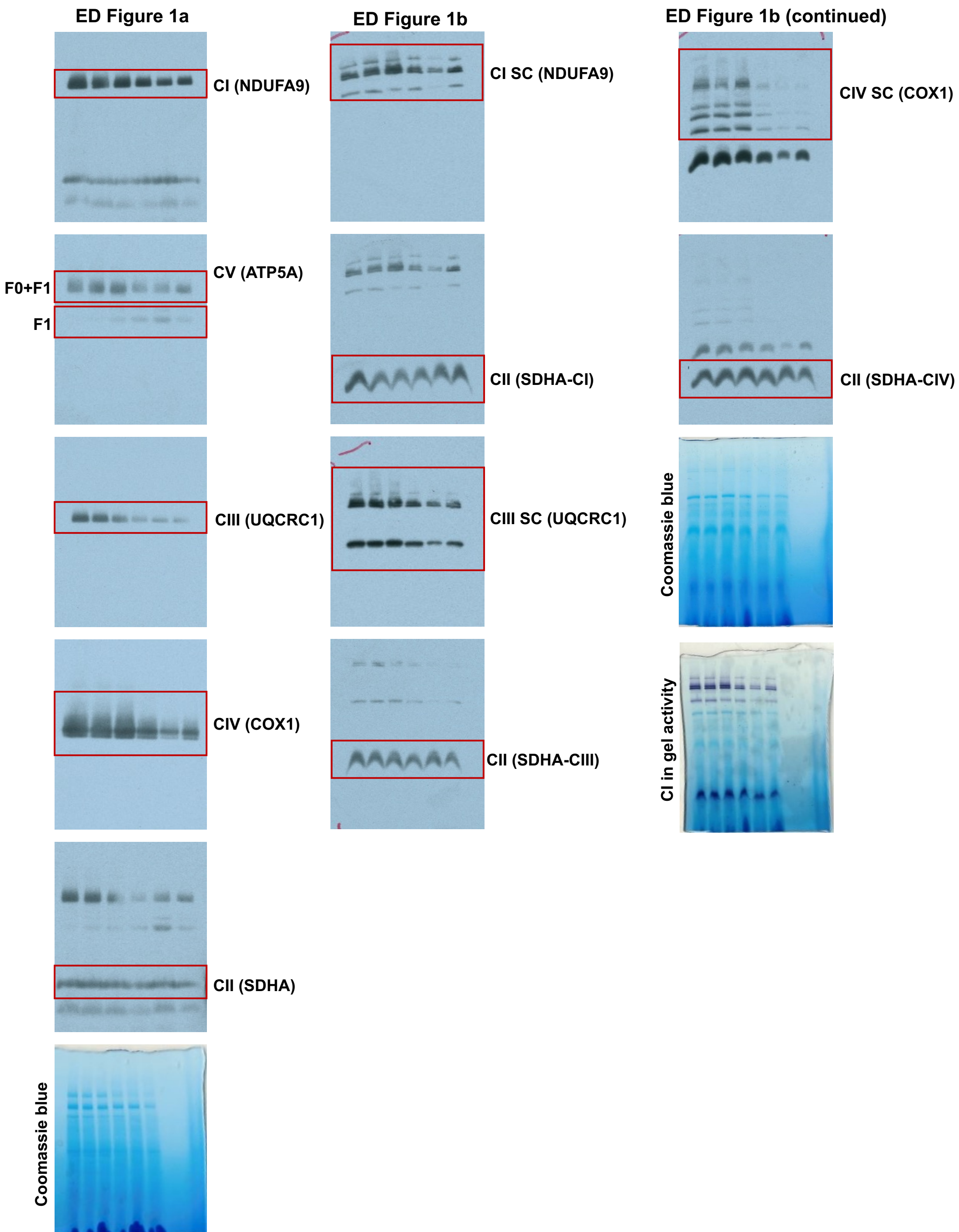


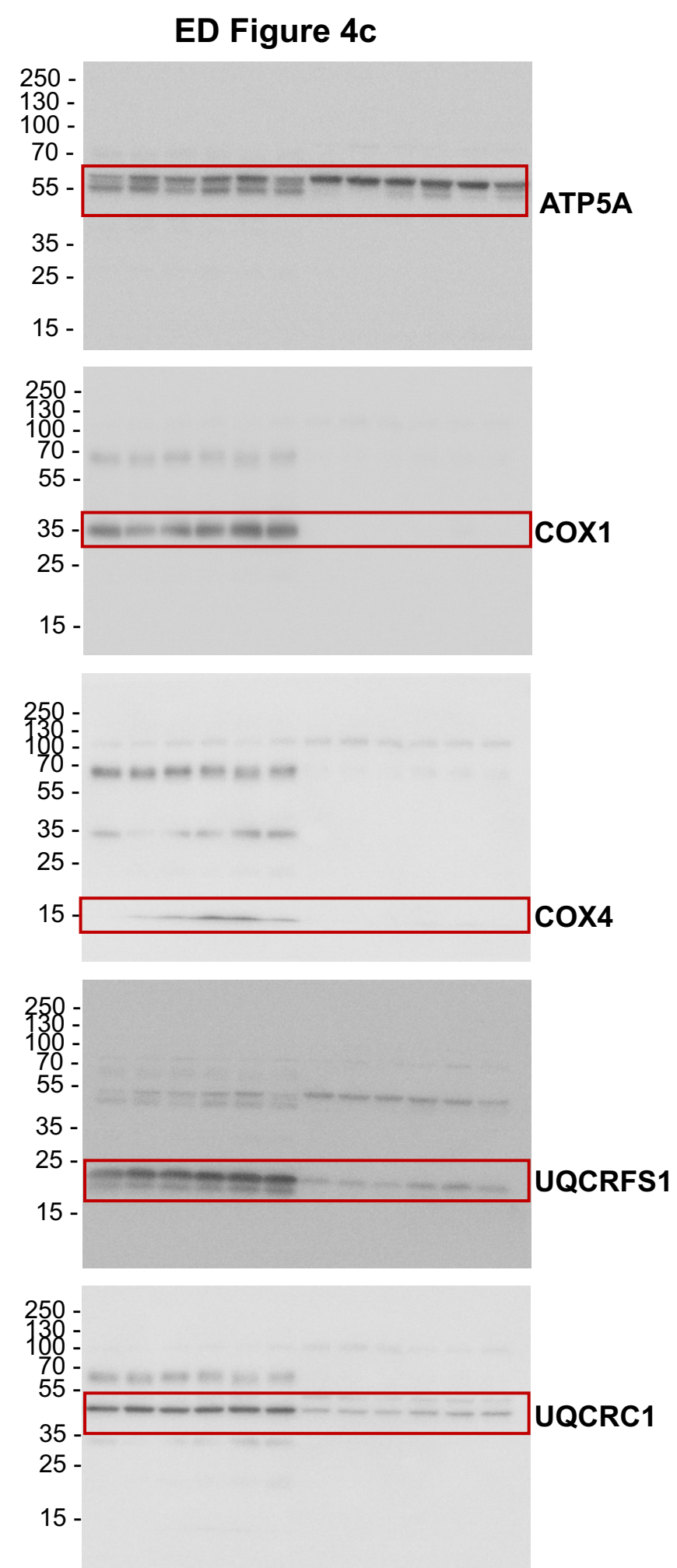
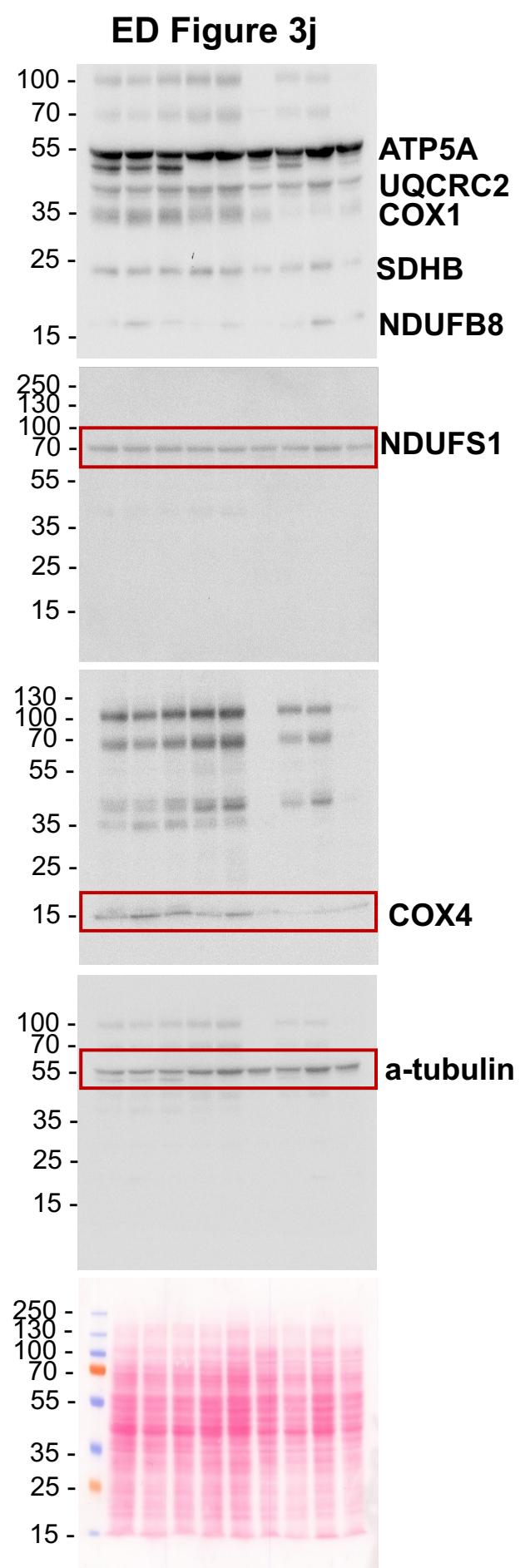
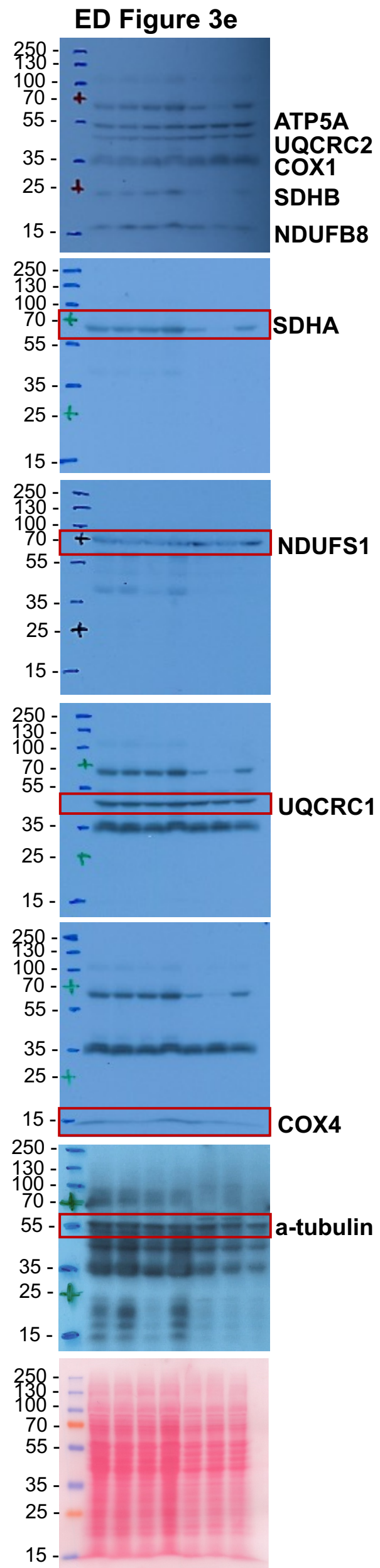
## Figure 4a



## Figure 4b

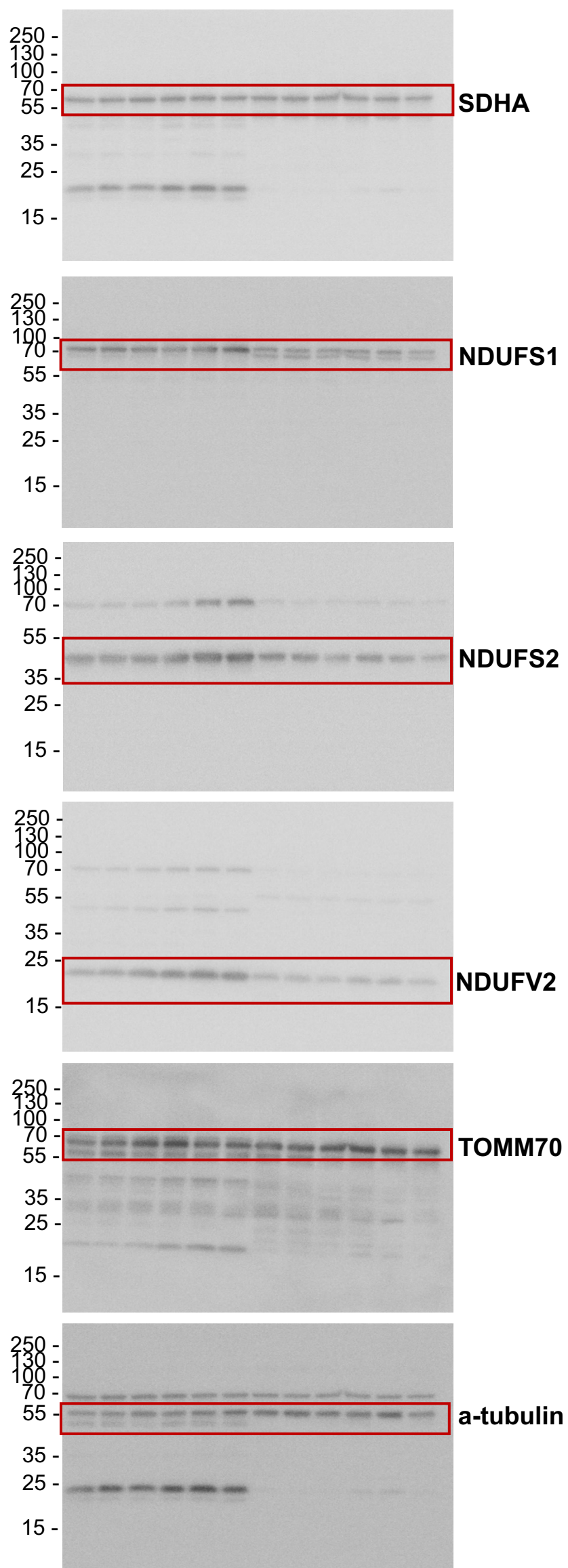




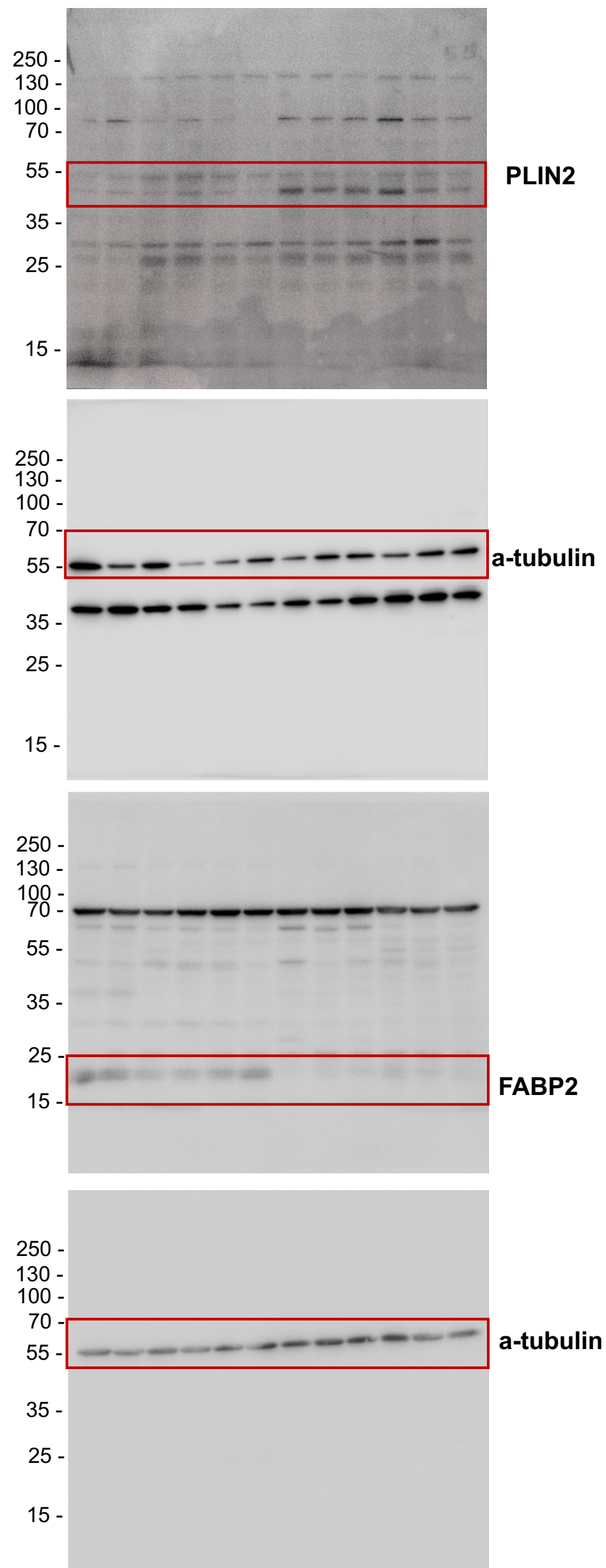


Supplementary Figure 1 (continued)

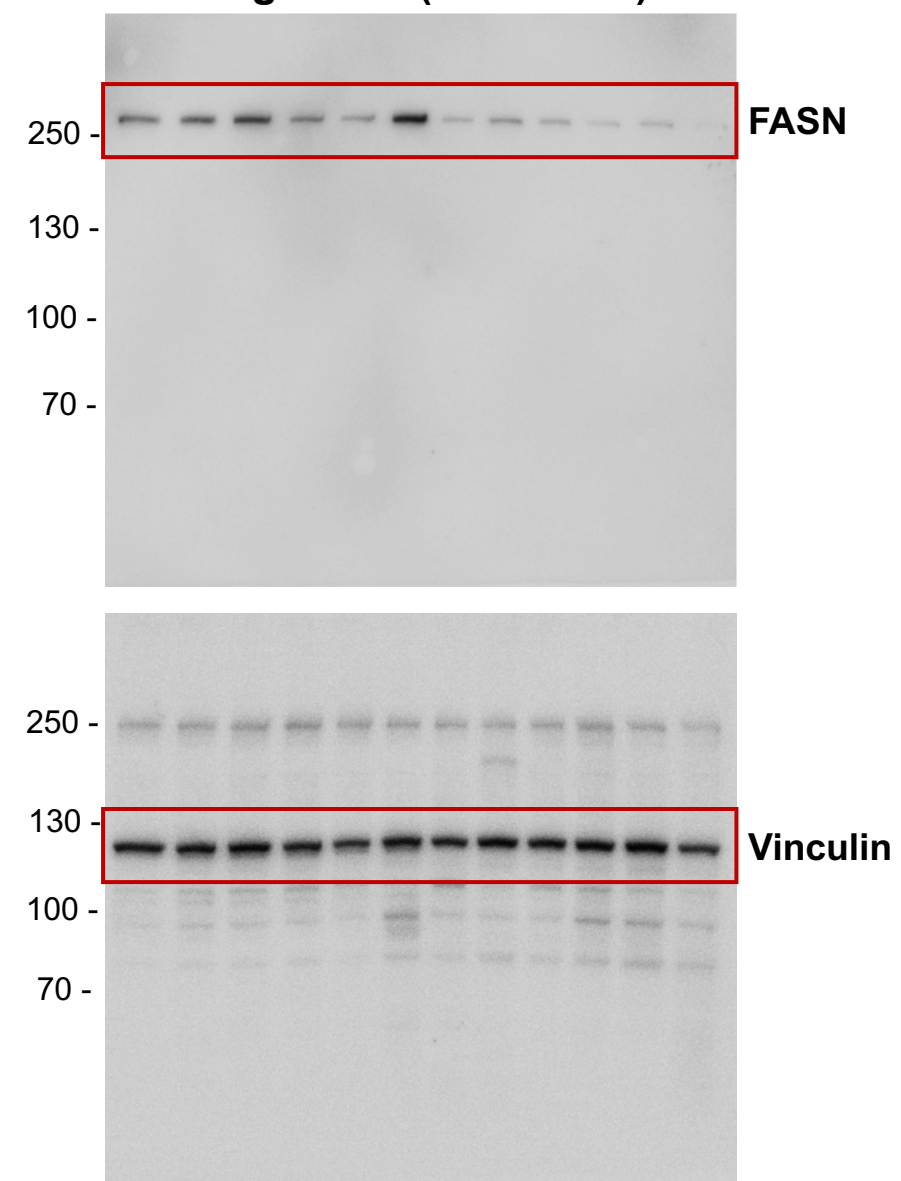
ED Figure 4c (continued)



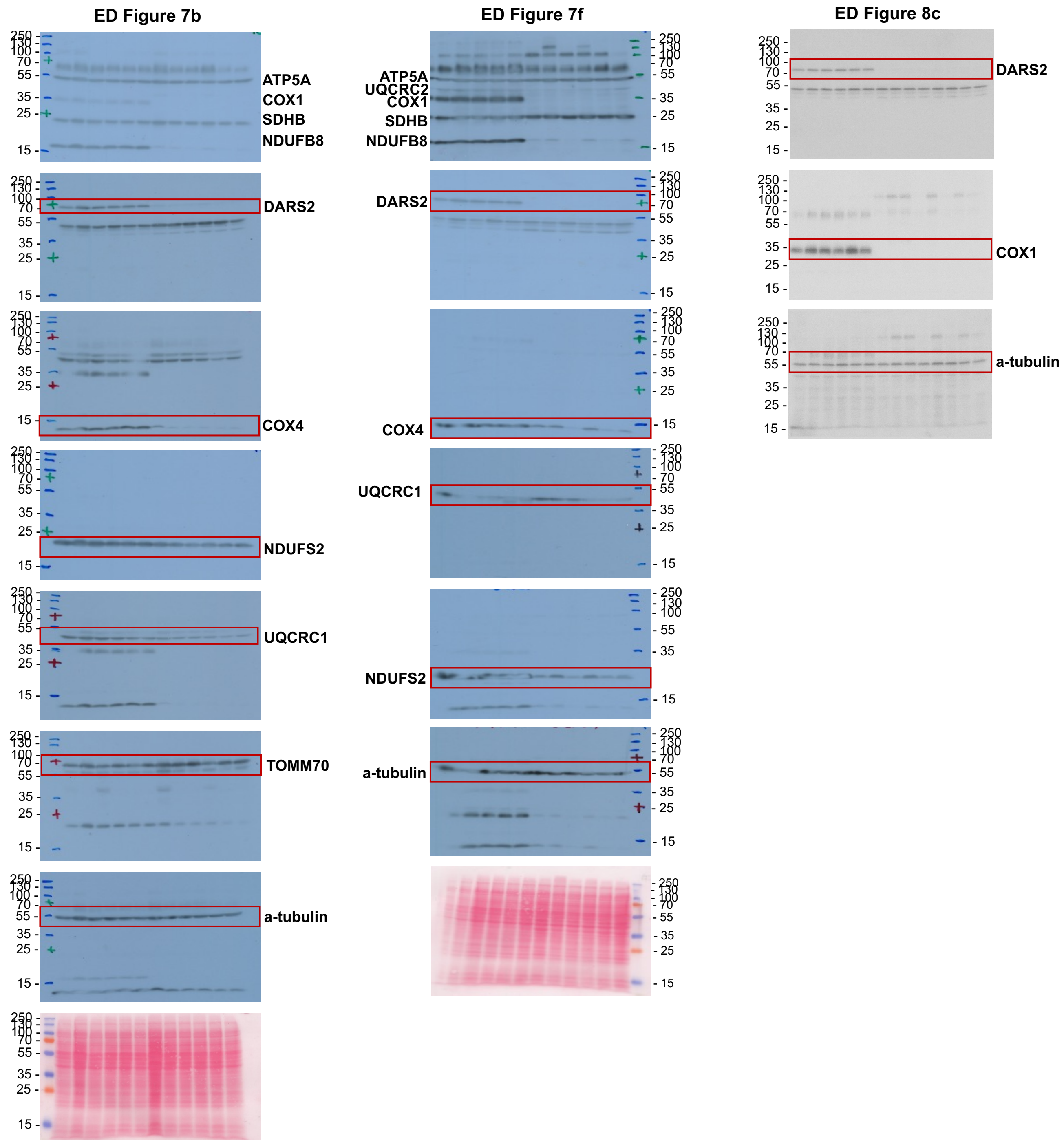
ED Figure 5b



ED Figure 5b (continued)



Supplementary Figure 1 (continued)



Supplementary Figure 1. Uncropped gels from immunoblots presented in the manuscript.

Genotype	Age	Whole Small intestine													Figure 1d,1f & Ext. Figure 1d,1e
		Stainings													
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	PAS	OLFM4	CC3	CC8	CD45	F4/80		
<i>Dars2<sup>fl/fl</sup></i> or <i>Dars2<sup>fl/wt</sup></i>	6-7 days-old	17	8	6	5	12	6	6	9	9	9	8	6		
DARS2 <sup>IEC-KO</sup>		19	8	6	5	12	6	6	9	9	9	8	6		

Genotype	Age	Proximal Small intestine						Ext. Figure 3d
		Stainings						
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	
<i>Sdha<sup>fl/fl</sup></i> or <i>Sdha<sup>fl/wt</sup></i>	6-7 days-old	10	5	5	5	8		
SDHA <sup>IEC-KO</sup>		11	5	5	5	8		

Genotype	Age	Proximal Small intestine						Ext. Figure 3i
		Stainings						
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	
<i>Cox10<sup>fl/fl</sup></i> or <i>Cox10<sup>fl/wt</sup></i>	6-7 days-old	7	5	5	5	5		
COX10 <sup>IEC-KO</sup>		8	5	5	5	5		

Genotype	Days after last tamoxifen injection	Proximal Small intestine										Figure 2d, 2e, Figure 3a (ORO), Ext. Figure 6b
		Stainings										
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	PAS	CC3	CD45		
<i>Dars2<sup>fl/fl</sup></i>	7d, 8d NCD	31	6	7	5	12	7	7	7	7		
DARS2 <sup>tamIEC-KO</sup>		31	6	7	5	12	7	7	7	7		

Genotype	Days after last tamoxifen injection	Proximal Small intestine						Ext. Figure 7d
		Stainings						
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	
<i>Dars2<sup>fl/fl</sup></i>	3d NCD	6	6	6	6	7		
DARS2 <sup>tamIEC-KO</sup>		6	6	6	6	7		

Genotype	Days after last tamoxifen injection	Proximal Small intestine						Ext. Figure 7h
		Stainings						
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	
<i>Dars2<sup>fl/fl</sup></i>	5d NCD	10	6	6	6	7		
DARS2 <sup>tamIEC-KO</sup>		11	6	6	6	7		

Genotype	Days after last tamoxifen injection	Proximal Small intestine						Figure 3a
		Stainings						
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	
<i>Dars2<sup>fl/fl</sup></i>	7d FFD	32	6	7	7	12		
DARS2 <sup>tamIEC-KO</sup>		32	6	7	7	12		

Genotype	Days after last tamoxifen injection	Distal Small intestine										Figure 2e, Ext. Figure 6c, 6d
		Stainings										
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	PAS	CC3	CD45		
<i>Dars2<sup>fl/fl</sup></i>	7d, 8d NCD	31	12	7	6	12	7	7	7	7		
DARS2 <sup>tamIEC-KO</sup>		31	12	7	6	12	7	7	7	7		

Genotype	Days after last tamoxifen injection	Distal Small intestine						Ext. Figure 8d
		Stainings						
		H/E	COX/SDH	Ki67	PLIN2	ORO	ALP	
<i>Dars2<sup>fl/fl</sup></i>	7d FFD	32	6	7	7	12		
DARS2 <sup>tamIEC-KO</sup>		32	6	7	7	12		

Genotype	Days after last tamoxifen injection	Proximal Small intestine				Ext. Figure 10a, 10b, 10c
		Stainings (IF)				
		TGN38/E-cadherin/PLIN2/DAPI		TGN38/E-cadherin/DAPI		
<i>Dars2<sup>fl/fl</sup></i>	7d, 8d NCD	12		6		
DARS2 <sup>tamIEC-KO</sup>		12		6		

Genotype	Days after last tamoxifen injection	Proximal Small intestine				Ext. Figure 10a, 10b
		Stainings (IF)				
		TGN38/E-cadherin/PLIN2/DAPI		TGN38/E-cadherin/DAPI		
<i>Dars2<sup>fl/fl</sup></i>	3d NCD	6		6		
DARS2 <sup>tamIEC-KO</sup>		6		6		

Genotype	Days after last tamoxifen injection	Proximal Small intestine				Figure 4d, Ext. Figure 10a
		Stainings (IF)				
		TGN38/E-cadherin/PLIN2/DAPI		TGN38/E-cadherin/DAPI		
<i>Dars2<sup>fl/fl</sup></i>	5d NCD	6		6		
DARS2 <sup>tamIEC-KO</sup>		6		6		

Genotype	Days after last tamoxifen injection	Proximal Small intestine				Ext. Figure 10c
		Stainings (IF)				
		TGN38/E-cadherin/PLIN2/DAPI		TGN38/E-cadherin/DAPI		
<i>Dars2<sup>fl/fl</sup></i>	7d FFD	6				
DARS2 <sup>tamIEC-KO</sup>		6				

Genotype	Days after last tamoxifen injection	Distal Small intestine		Ext. Figure 10b
		Stainings (IF)		
		TGN38/E-cadherin/PLIN2/DAPI		
<i>Dars2<sup>fl/fl</sup></i>	7d, 8d NCD	6		
DARS2 <sup>tamIEC-KO</sup>		6		

**Supplementary Table 4.** List of the genotypes and the numbers of mice for which histological sections were analyzed for each experimental group.

<b>Name</b>	<b>Forward (5' - 3')</b>	<b>Reverse (5' - 3')</b>
<i>Ppara</i>	AACATCGAGTGTCGAATATGTGG	CCGAATAGTTCGCCGAAAGAA
<i>Scd1</i>	GCTCTACACCTGCCTCTTC	CCGTGCTTGTAAGTTCTG
<i>Acc1</i>	GACAGAGGAAGATGGCGTCC	TACAACTTCTGCTCGCTGGG
<i>Srepb1c</i>	CGCGGAAGCTGTCGGGGTAG	AAATGTGCAATCCATGGCTCCGTGGTC
<i>Dgat1</i>	GCCCCATGCGTGATTATT	TCTGTCAGGGCACCCTACT
<i>Acox1</i>	TAACCTCCTCACTCGAAGCCA	AGTTCCATGACCCATCTCTGTC
<i>Mgat2</i>	GTGTGGGATTAGGGGGACTT	TCCCTGTTTGTCTTTGGTC
<i>Mcad</i>	AGGGTTTAGTTTTGAGTTGACGG	CCCCGCTTTTGTCTATTCCG
<i>Ehhadh</i>	ATGGCTGAGTATCTGAGGCTG	GGTCCAACTAGCTTTCTGGAG
<i>Fasn</i>	GGAGGTGGTGATAGCCGGTAT	TGGGTAATCCATAGAGCCCAG
<i>Pparg</i>	CCTGAAGCTCCAAGAATACCA	GCCTGATGCTTTATCCCCACA
<i>Mttp</i>	TGAGCGGCTATACAAGCTCAC	CTGGAAGATGCTCTTCTCGC
<i>Lipe</i>	AGTGCCTATTCAGGGACAGA	TGGGCGATGTGGTCTTTT
<i>Mgat1</i>	CTGGTTCTGTTTCCCGTTGT	TGGGTCAAGGCCATCTTAAC
<i>Gpat3</i>	GTGCTGGGTGTCCTAGTGC	AAGCTGATCCCAATGAAAGC
<i>Acly</i>	CAGTCCAAGTCCAAGATCC	GTCTCGGGAGCAGACATAGT
<i>Hadha</i>	TGCATTTGCCGCAGCTTTAC	GTTGGCCCAGATTTCTGTTCA
<i>Acadvl</i>	CTACTGTGCTTCAGGGACAAC	CAAAGGACTTCGATTCTGCCC
<i>Cd36</i>	CTGTGGGCTCATTGCTGG	CGCCACGTCATCTGGGTTT
<i>Cpt2</i>	CAGCACAGCATCGTACCCA	TCCAATGCCGTTCTCAAAT
<i>Atgl</i>	GGATGGCGGCATTTTCAGACA	CAAAGGGTTGGGTTGGTTCAG
<i>Lpl</i>	ACTCGCTCTCAGATGCCCTA	TTGTGTTGCTTGCCATTCTC
<i>Hprt1</i>	GCCCCAAAATGGTTAAGGTT	TTGCGCTCATCTTAGGCTTT

**Supplementary Table 5.** SYBR Green primer sequences used for quantitative RT-PCR.