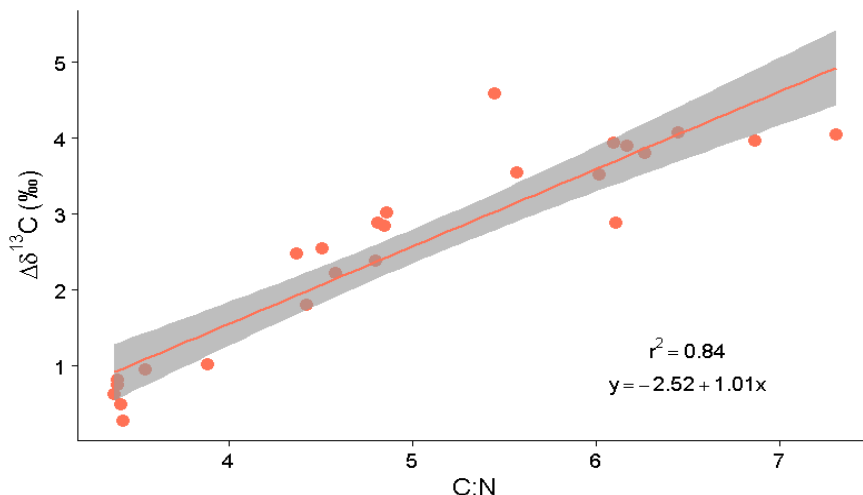


## Supplementary Material



**Figure S1.** Positive relationship between C:N and  $\Delta\delta^{13}\text{C}$  in Patagonian toothfish *Dissostichus eleginoides* in the Southwestern Atlantic Ocean. The straight line and shadows are the fitted regression line and its 95 % confidence interval, respectively. The  $r^2$  show the C:N explains 84 % ( $p < 0.05$ ) of the variation in  $\Delta\delta^{13}\text{C}$ . The corrected  $\delta^{13}\text{C}$  in organisms analyzed without lipid extraction was calculated as  $\delta^{13}\text{C}_{\text{corrected}} = \delta^{13}\text{C}_{\text{untreated}} + \Delta\delta^{13}\text{C}$  (being  $\Delta\delta^{13}\text{C}$  estimated by the fitted regression model).

**Table S1.** Mean values of  $\delta^{13}\text{C}$  (‰),  $\delta^{15}\text{N}$  (‰) and C:N ratios, for the four demersal fish species. Standard deviation in parentheses.  $\delta^{13}\text{C}$  values are reported as: raw values with no corrections ( $\delta^{13}\text{C}_{\text{untreated}}$ ), raw values corrected by lipid normalization ( $\delta^{13}\text{C}_{\text{corrected}}$ ).

Species	$\delta^{13}\text{C}_{\text{untreated}}$	$\delta^{13}\text{C}_{\text{corrected}}$	$\delta^{15}\text{N}$	C:N
<i>Merluccius australis</i>	-18.7 (1.5)	-18.8 (1.4)	14.6 (1.3)	3.3 (0.3)
<i>Dissostichus eleginoides</i> (adults)	-22.6 (1.1)	-19.8 (1.3)	13.0 (1.0)	5.2 (0.9)
<i>Macruronus magellanicus</i> (juveniles)	-17.7 (0.6)	-17.0 (0.6)	14.1 (1.0)	3.3 (0.1)
<i>Dissostichus eleginoides</i> (juveniles)	-20.3 (1.9)	-18.2 (1.2)	13.7 (1.0)	4.5 (1.1)
<i>Micromesistius australis</i> (adults)	-19.9 (0.8)	-20.0 (0.9)	10.8 (0.7)	3.2 (0.1)
<i>Macruronus magellanicus</i> (adults)	-18.2 (0.5)	-17.5 (0.6)	14.0 (0.7)	3.5 (0.2)
<i>Micromesistius australis</i> (juveniles)	-18.9 (0.5)	-19.0 (0.4)	11.2 (0.4)	3.2 (0.0)

**Table S2.** Proportion of overlap between Bayesian estimate of standard ellipse area, fit 95% of the data, of different groups. Should be read as “the proportion of ROW GROUP ellipse that overlaps with COLUMN GROUP ellipse” (e.g. 41 % the DEa SIBER ellipse overlaps with the MeA SIBER ellipse). Mean values are shown. Standard deviation in parentheses. MeA: *Merluccius australis*, DEa: *Dissostichus eleginoides* (adults), DEj: *Dissostichus eleginoides* (juveniles), MMa: *Macruronus magellanicus* (adults), MMj: *Macruronus magellanicus* (juveniles), MiAa: *Micromesistius australis* (adults), MiAj: *Micromesistius australis* (juveniles).

Group	MeA	DEa	DEj	MMa	MMj	MiAa	MiAj
MeA							
DEa	0.41 (0.07)						
DEj	0.28 (0.05)	0.39 (0.07)					
MMa	0.10 (0.03)	0.11 (0.05)	0.32 (0.06)				
MMj	0.15 (0.04)	0.11 (0.05)	0.32 (0.04)	0.44 (0.08)			
MiAa	0.02 (0.02)	0.11 (0.06)	0.08 (0.03)	0.01 (0.01)	0.01 (0.02)		
MiAj	0.01 (0.02)	0.05 (0.06)	0.04 (0.05)	0.01 (0.02)	0.02 (0.03)	0.30 (0.08)	

**Table S3.** Bayesian estimate of standard ellipse area (SEAB). SEAB\_40 %: fit 40 % of the data. SEAB\_95 %: fit 95 % of the data. Species are sorted by decreasing SIBER ellipse area. Mean values are shown. Standard deviation in parentheses.

Species	SEAB_40%	SEAB_95%
<i>Merluccius australis</i>	3.51 (0.82)	20.59 (4.80)
<i>Dissostichus eleginoides</i> (adults)	2.51 (0.68)	14.69 (4.00)
<i>Macruronus magellanicus</i> (juveniles)	1.62 (0.22)	9.53 (1.28)
<i>Dissostichus eleginoides</i> (juveniles)	1.61 (0.25)	9.43 (1.45)
<i>Micromesistius australis</i> (adults)	1.45 (0.19)	8.50 (1.14)
<i>Macruronus magellanicus</i> (adults)	0.78 (0.12)	4.58 (0.72)
<i>Micromesistius australis</i> (juveniles)	0.71 (0.21)	4.15 (1.23)

**Table S4.** Proportion of overlap between Bayesian estimate of standard ellipse area, fit 40 % of the data, of different groups. Should be read as “the proportion of ROW GROUP ellipse that overlaps with COLUMN GROUP ellipse” (e.g. 10 % the DEa SIBER ellipse overlaps with the MeA SIBER ellipse). Mean values are shown. Standard deviation in parentheses. MeA: *Merluccius australis*, DEa: *Dissostichus eleginoides* (adults), DEj: *Dissostichus eleginoides* (juveniles), MMa: *Macruronus magellanicus* (adults), MMj: *Macruronus magellanicus* (juveniles), MiAa: *Micromesistius australis* (adults), MiAj: *Micromesistius australis* (juveniles).

Group	MeA	DEa	DEj	MMa	MMj	MiAa	MiAj
MeA							
DEa	0.10 (0.09)						
DEj	0.01 (0.02)	0.08 (0.07)					
MMa	0	0	0.08 (0.07)				
MMj	0	0	0.06 (0.05)	0.31 (0.13)			
MiAa	0	0	0	0	0		
MiAj	0	0	0	0	0	0.06 (0.09)	