1   # Supplementary Material S3

2   # Analysis of SECIS elements in Sepp1 genes

3   **Legends:**

4   <u>Figure S3A</u>

5   Alignment of SECIS elements in selenoprotein P genes of representative vertebrate species. SelPa is

6   used to designate the direct homologue of human Sepp1, with multiple in-frame UGAs, while SelPb

7   designates the additional single-UGA containing gene found in non placental vertebrates (Sepp1b). S1

8   designates the first SECIS found downstream of the coding sequence. S2 designates the second one

9   e.g. SelPa.S1.Alligator_mississipiensis is the first sequence in the multi-Sec Sepp1 of the alligator. The

10   consensus sequence is displayed at the bottom.

11

12   <u>Figure S3B</u>

13   Average distance tree computed by Jalview based on the alignment shown in panel

14

15   <u>Figure S3C</u>

16   Structure of SECIS elements as predicted by SECISearch3 webserver

A.

SelPa.S2.Takifugu_rubripes	
SelPa.S2.Latimeria_chalumnae	
SelPa.S2.Alligator_mississippiensis	
SelPa.S2.Monodelphis_domestica	
SelPa.S2.Mus_musculus	
SelPa.S2.Homo_sapiens	
SelPa.S1.Takifugu_rubripes	
SelPa.S1.Latimeria_chalumnae	
SelPa.S1.Alligator_mississippiensis	
SelPa.S1.Monodelphis_domestica	
SelPa.S1.Mus_musculus	
SelPa.S1.Homo_sapiens	
SelPb.S1.Takifugu_rubripes	
SelPb.S1.Alligator_mississippiensis	
SelPb.S1.Monodelphis_domestica	
SelPb.S1.Petromyzon_marinus	

Consensus

B.

328.50 — SelPb.S1.*Petromyzon_marinus*
29.25
328.50 — SelPb.S1.*Monodelphis_domestica*
41.25
357.75 — SelPb.S1.*Alligator_mississippiensis*
19.22
399.00 — SelPb.S1.*Takifugu_rubripes*

135.00 — SelPa.S1.*Homo_sapiens*
114.00
135.00 — SelPa.S1.*Mus_musculus*
92.10
180.00 — SelPa.S1.*Monodelphis_domestica*
31.50
37.50 — SelPa.S1.*Alligator_mississippiensis*
52.65
211.50 — SelPa.S1. *Latimeria_chalumnae*

341.10 — SelPa.S1. *Takifogu_rubripes*

14.47

153.00 — SelPa.S2.*Homo_sapiens*
40.50
153.00 — SelPa.S2.*Mus_musculus*
64.50
193.50 — SelPa.S2.*Monodelphis_domestica*
60.38
258.00 — SelPa.S2.*Alligator_mississippiensis*
14.63 318.38 — SelPa.S2. *Latimeria_chalumnae*
70.75
333.00 — SelPa.S1. *Takifugu_rubripes*

C.

SelPb.S1.Petzomyzon_marinus

SelPa.S1.Takifugu_rubripes

SelPa.S1.Homo_sapiens

SelPa.S1_Takifugu_rubripes

SelPa.S2_Takifugu_rubripes

SelPa.S2.Homo_sapiens