

Supplementary table 1. Differences between the secondary structures of rRNAs in poriferan mitochondria and *E. coli*

Region in <i>E. coli</i>	<i>M. brevicollis</i>	<i>G. neptuni</i>	<i>T. actinia</i>	<i>M. senile</i>
A. srRNA				
H6	○ (+6)	◎ (-15)	○ (+9)	○ (-3)
H8-H10	◎ (-21)	◎ (-42)	◎ (-66)	● (-77)
H11	○ (?)	◎ (-10)	◎ (-18)	○ (?)
H12	○ (?)	◎ (-13)	◎ (-13)	◎ (-10)
H16-H17	◎ (-35)	● (-89)	● (-88)	● (-87)
H21	○ (-1)	● (-63)	● (-63)	● (-61)
H26	○ (-3)	◎ (-14)	◎ (-4)	◎ (-20)
H33	◎ (+67)1	◎ (-16)	◎ (-12)	● (-42)
H37	○ (+0)	● (-11)	● (-11)	● (-15)
H39	○ (+6)	◎ (-12)	◎ (-6)	● (-33)
H40	○ (+1)	● (-26)	● (-26)	● (-26)
H41	○ (?)	◎ (-13)	◎ (-15)	◎ (-19)
H44	○ (+13)	○ (+47)	○ (+35)	◎ (-22)
B. lrRNA				
H5-7	◎ (-19)	◎ (-16)	◎ (-14)	◎ (-19)
H8-H10	◎ (-37)	◎ (-47)	◎ (-44)	◎ (-46)
H17-H20	○ (-6)	◎ (-47)	◎ (-31)	◎ (-82)
H21	◎ (-9)	◎ (-16)	◎ (-16)	● (-25)
H24	○ (-2)	◎ (-10)	○ (0)	◎ (-16)
H25	○ (+1)	◎ (-16)	◎ (-16)	◎ (-16)
H34	○ (+2)	○ (0)	○ (0)	◎ (-23)
H38	○ (+103)	◎ (-5)	◎ (-8)	◎ (-16)
H45	○ (+108)	◎ (-8)	◎ (+19)	○ (0)
H46	◎ (-8)	◎ (-9)	◎ (-8)	◎ (-11)
H52	○ (+5)	◎ (-13)	◎ (-10)	◎ (-13)
H53-H59	◎ (-151)	● (-173)	● (-179)	● (-170)
H60	○ (0)	◎ (-12)	◎ (-13)	◎ (-14)
H62	○ (0)	○ (+1)	○ (0)	● (-24)
H63-H63_1	◎ (-17)	○ (-4)	◎ (-7)	● (-57)
H68	◎ (-9)	◎ (-6)	◎ (-6)	◎ (-9)
H76-H78	○ (+5)	◎ (-51)	◎ (-10)	◎ (-22)
H79	○ (+41)	◎ (-24)	◎ (-16)	◎ (-15)
H83-H85	○ (+1)	◎ (-22)	◎ (-23)	◎ (-40)
H87	○ (0)	○ (+10)	○ (+20)	○ (+9)
H96	○ (+2)	◎ (-9)	○ (+4)	○ (+1)
H94_1	● (-22)	● (-15)	◎ (-3)	● (-22)
H99-H101	◎ (-18)	◎ (-21)	◎ (-20)	● (-74)

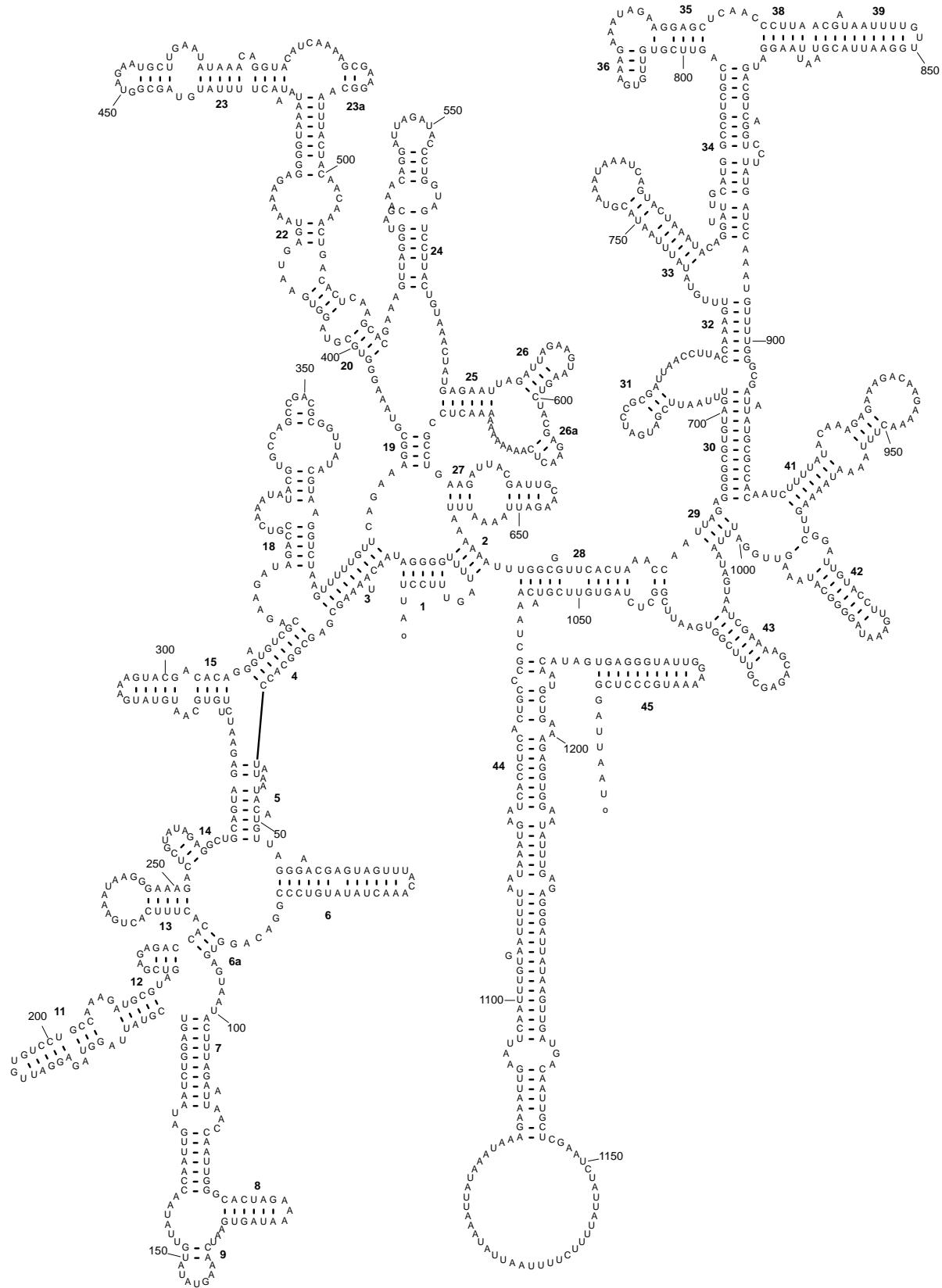
Only the regions that have changed by more than 5 nt. are listed

● - element is lost

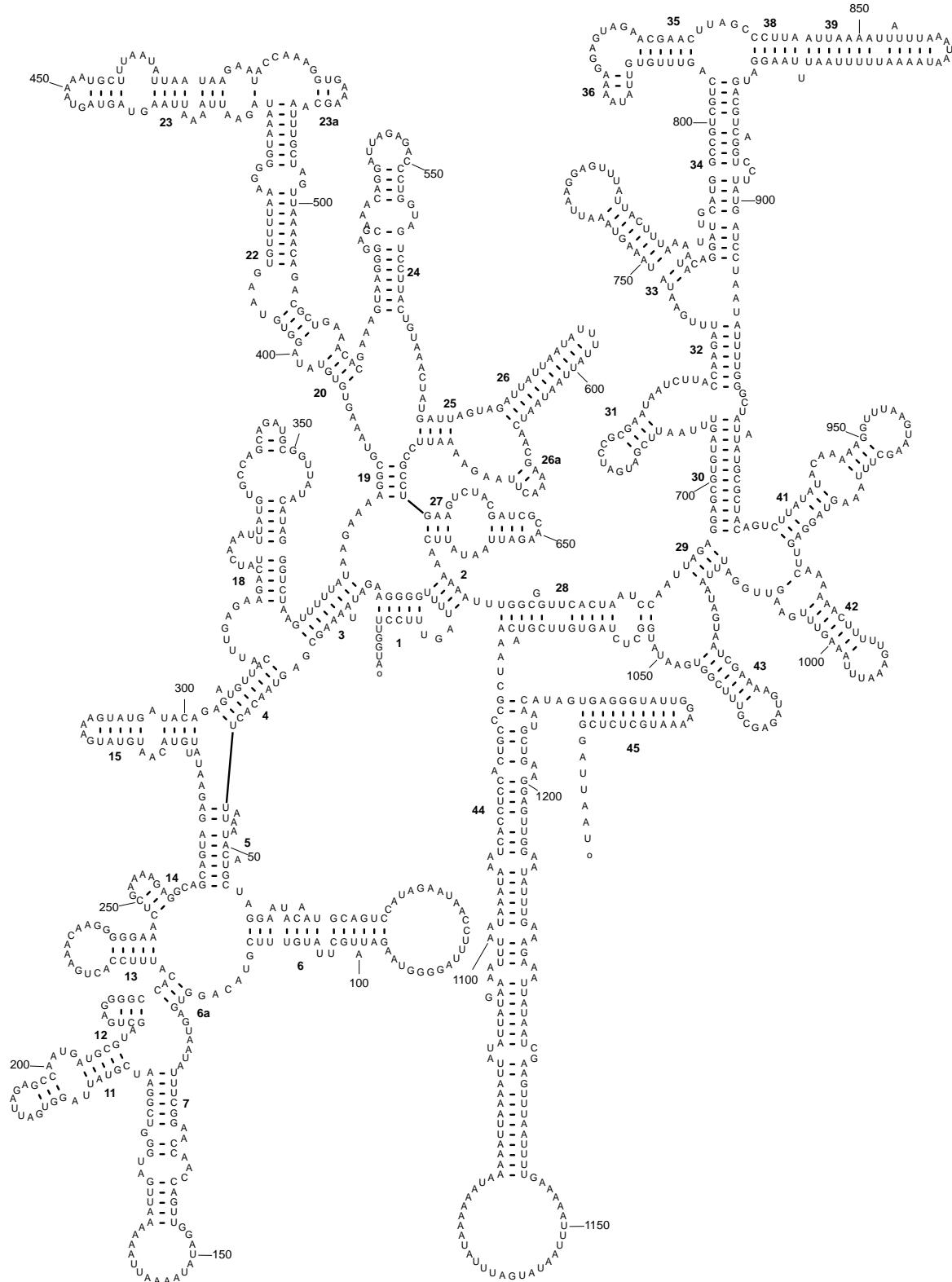
◎ - element is reduced in size

○ - element is either conserved or expanded

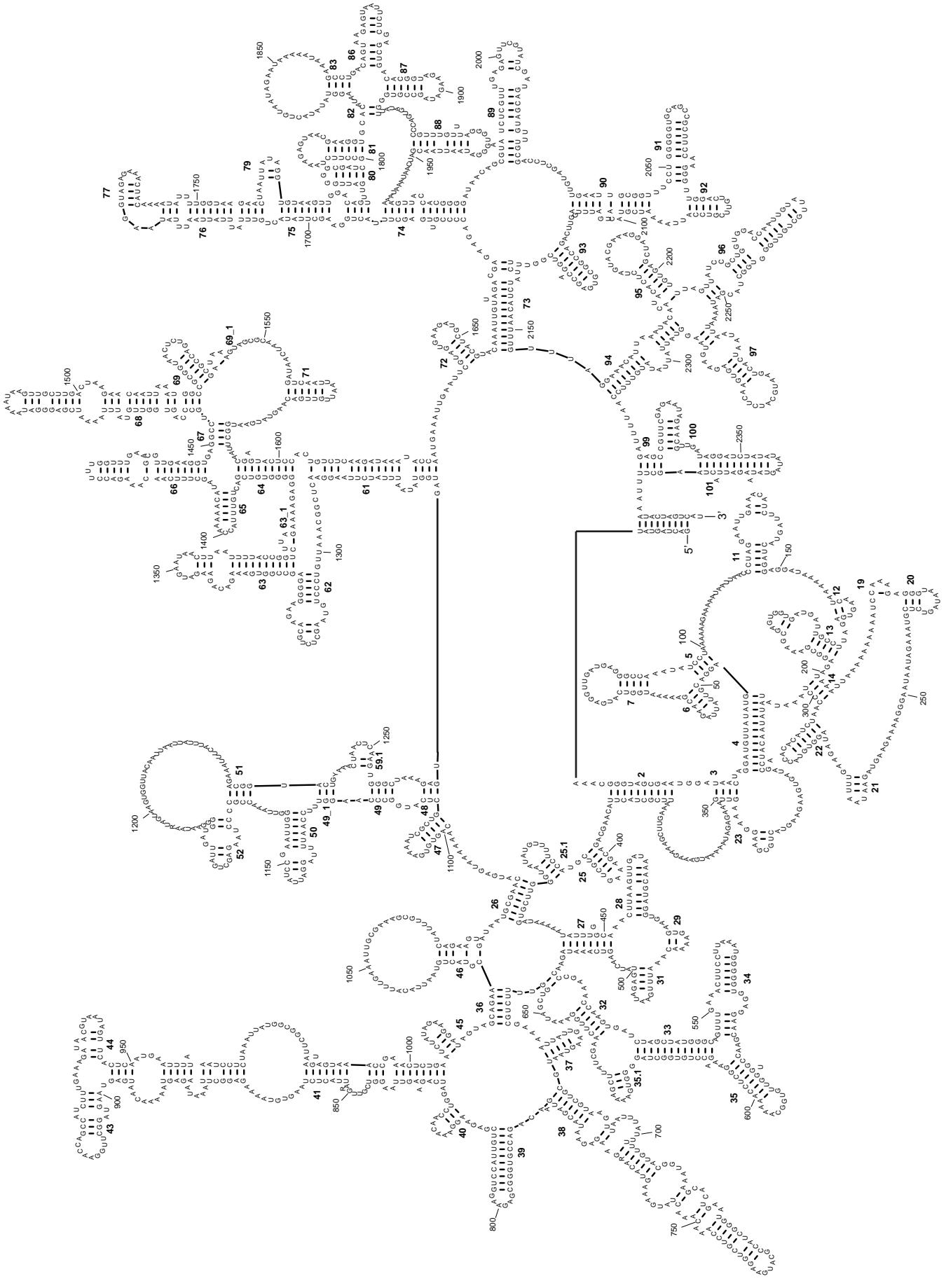
The numbers in parentheses indicate the nt. difference with *E.coli*



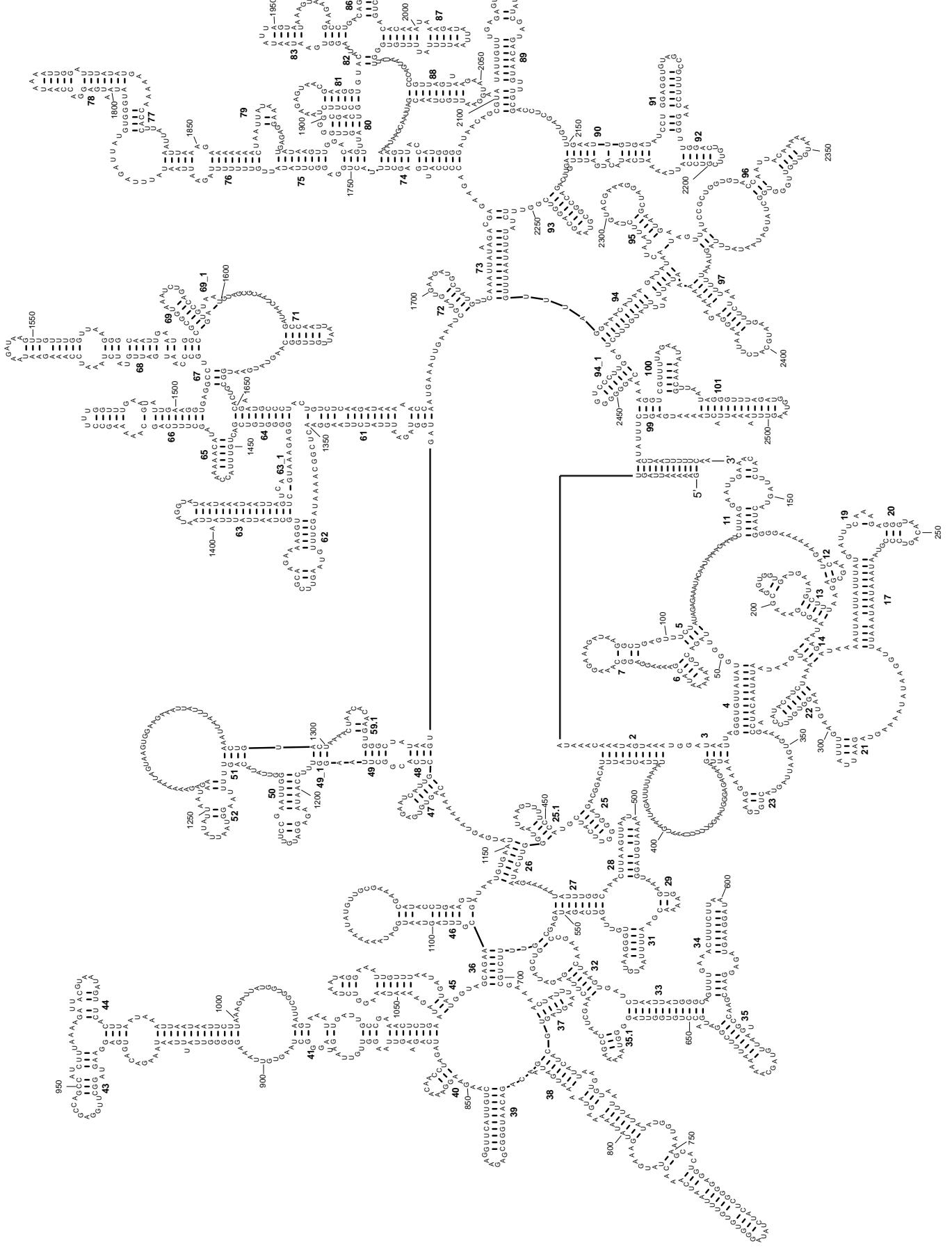
Supplementary figure 1: Inferred secondary structure for *Geodia neptuni* mt-srRNA



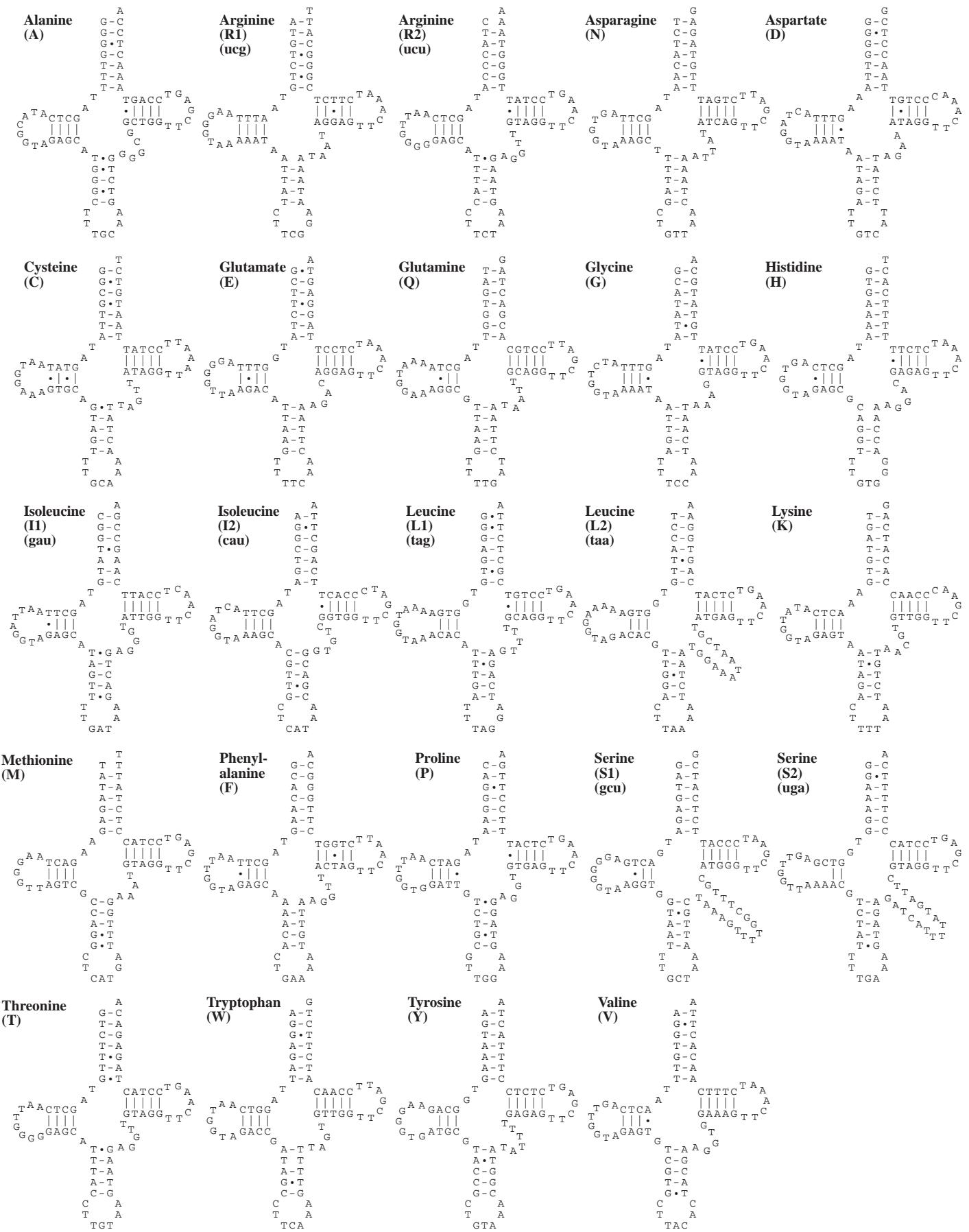
Supplementary figure 2: Inferred secondary structure for *Tethya actinia* mt-srRNA



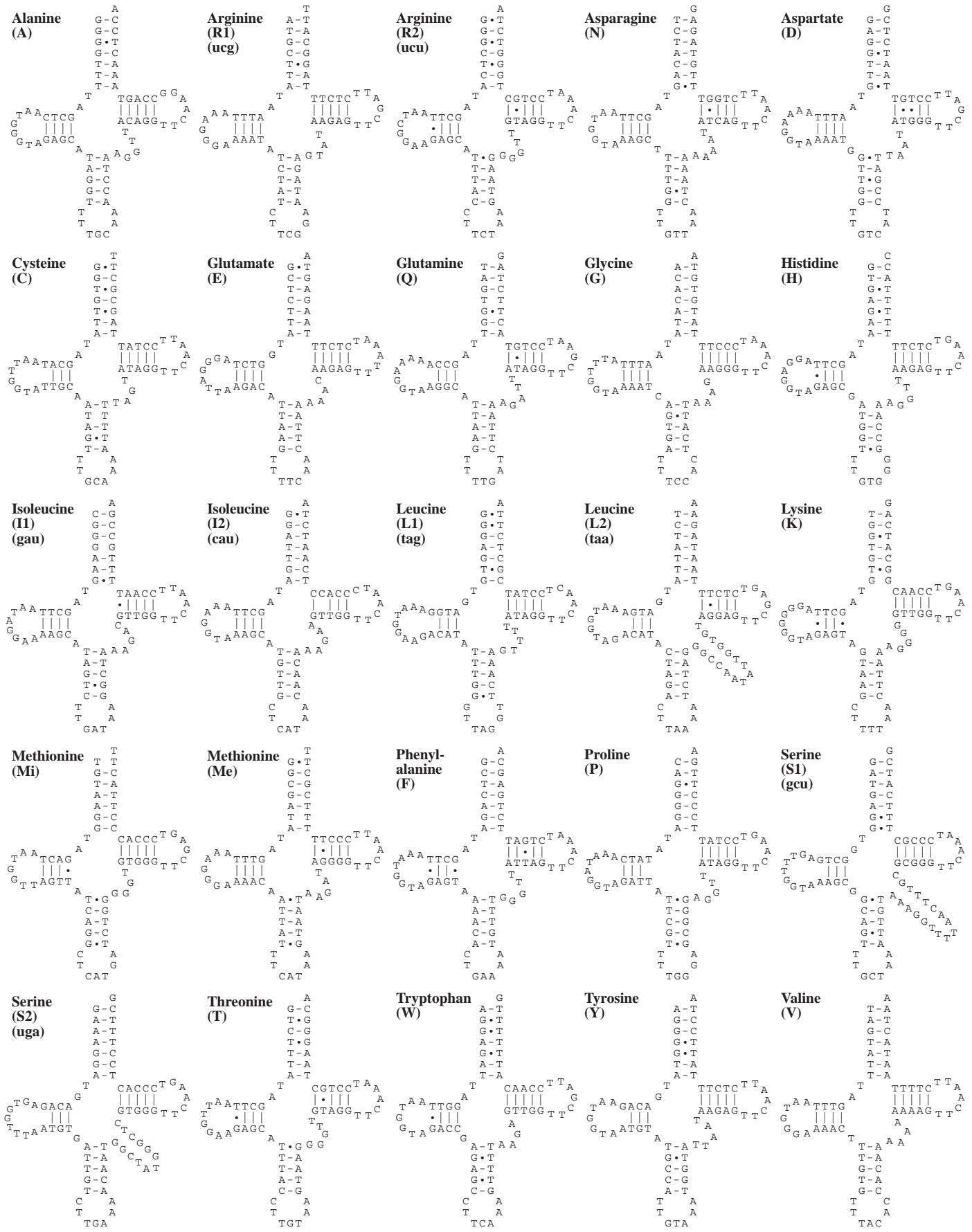
Supplementary figure 3: Inferred secondary structure for *Geodia neptuni* mt-IrRNA



Supplementary figure 4: Inferred secondary structure for *Tethya actinia* mt-IrRNA



Supplementary figure 5: Inferred secondary structures for *Geodia neptuni* mt-tRNAs



Supplementary figure 6: Inferred secondary structures for *Tethia actinia* mt-tRNAs