

Secondary structure of the 16S rRNA gene of *E. coli*. The diagram shows a complex RNA fold with various stems and loops. The sequence is color-coded: red for the 3' end, blue for the 5' end, and green for the rest. The 3' end sequence is 3'-UUAUCCGAC-5' and the 5' end sequence is 5'-UUGUAGGUG-3'.

[illegible]

| Star                                                                                       | Mature |   |     |
|--------------------------------------------------------------------------------------------|--------|---|-----|
| uauacuauggaauaucccacuuugucacuuuguauuuuacuugggcauacacacucgccuaaaaggcucguguguaauaccgagaaaaua |        |   |     |
| .....uaucccacuuugucacuuugua.....                                                           | 1      | 0 | s03 |
| .....aucccacuuugucacuuugua.....                                                            | 1      | 0 | s03 |
| .....caagugacucguggggaauuu.....                                                            | 1      | 0 | s03 |
| .....agugacucguggggaauuuucc...                                                             | 4      | 0 | s03 |
| .....agugacucguggggaauuucca..                                                              | 2      | 0 | s03 |
| uauacuauggaauauccc.....                                                                    | 2      | 0 | s07 |
| uauacuauggaauaucccacu.....                                                                 | 3      | 0 | s07 |
| .auacuauggaauaucccacu.....                                                                 | 3      | 0 | s07 |
| .....auaucccacuuugucacuuugua.....                                                          | 1      | 0 | s07 |
| .....uaucccacuuugucacuuug.....                                                             | 4      | 0 | s07 |
| .....uaucccacuuugucacuuuguauu.....                                                         | 4      | 0 | s07 |
| .....uaucccacuuugucacuuuguauA.....                                                         | 1      | 1 | s07 |
| .....aucccacuuugucacuuugu.....                                                             | 2      | 0 | s07 |
| .....ucccacuuugucacuuuguauu.....                                                           | 3      | 0 | s07 |
| .....cccacuuugucacuuuguauuA.....                                                           | 1      | 1 | s07 |
| .....uugucacuuuguauuuuacuu.....                                                            | 1      | 0 | s07 |
| .....ucguguguaauaccgagaaaaa.....                                                           | 1      | 0 | s07 |
| .....agaaaauacaagugacucg.....                                                              | 1      | 0 | s07 |
| .....aaaauacaagugacucgugggU.....                                                           | 1      | 1 | s07 |
| .....aaaauacaagugacucguggg.....                                                            | 2      | 0 | s07 |
| .....uacaagugacucguggggaauuuuccaua.....                                                    | 5      | 0 | s07 |
| .....caagugacucguggggaauuu.....                                                            | 10     | 0 | s07 |
| .....caagugacucguggggaauuuAc...                                                            | 2      | 1 | s07 |
| .....agugacucguggggaauuu.....                                                              | 3      | 0 | s07 |
| .....agugacucguggggaauuuc.....                                                             | 1      | 0 | s07 |
| .....agugacucguggggaauuuucc...                                                             | 1      | 0 | s07 |
| .....agugacucguggggaauuuucU..                                                              | 1      | 1 | s07 |
| .....agugacucguggggaauuucca..                                                              | 2      | 0 | s07 |
| .....ugacucguggggaauuucca..                                                                | 2      | 0 | s07 |
| .....ugacucguggggaauuuccau.....                                                            | 1      | 0 | s07 |
| .....ugacucguggggaauuuccaua.....                                                           | 1      | 0 | s07 |
| .....aaaucccacuuugucacuuug.....                                                            | 1      | 0 | s09 |
| .....aaaucccacuuugucacuuugu.....                                                           | 2      | 0 | s09 |
| .....auaucccacuuugucacuuug.....                                                            | 1      | 0 | s09 |
| .....uaucccacuuugucacuuugua.....                                                           | 2      | 0 | s09 |
| .....ucccacuuugucacuuuguauu.....                                                           | 1      | 0 | s09 |
| .....cucgccuaaaggcucgugugugu.....                                                          | 1      | 0 | s09 |
| .....uaaaggcucguguguaauacc.....                                                            | 1      | 0 | s09 |
| .....accgagaaaauacaagugacu.....                                                            | 1      | 0 | s09 |
| .....aaaauacaagugacucgu.....                                                               | 1      | 0 | s09 |
| .....uacaagugacucguggga.....                                                               | 1      | 0 | s09 |
| .....uacaagugacucgugggga.....                                                              | 2      | 0 | s09 |
| .....uacaagugacucguggggaau.....                                                            | 1      | 0 | s09 |
| .....caagugacucguggggaauuu.....                                                            | 2      | 0 | s09 |
| .....caagugacucguggggaauuuc.....                                                           | 2      | 0 | s09 |
| .....agugacucguggggaauuuc.....                                                             | 2      | 0 | s09 |
| .....agugacucguggggaauuuccaua.....                                                         | 1      | 0 | s09 |
| .....ugacucguggggaauuuccaua.....                                                           | 1      | 0 | s09 |
| .....aaaucccacuuugucacuuug.....                                                            | 1      | 0 | s04 |
| .....cguguguaauaccgagaaaa.....                                                             | 1      | 0 | s04 |
| .....agugacucguggggaauuucca..                                                              | 1      | 0 | s04 |
| .....auggaauaucccacuuugucacu.....                                                          | 2      | 0 | s08 |
| .....aaaucccacuuugucacuuuguauA.....                                                        | 1      | 1 | s08 |
| .....auaucccacuuugucacuuug.....                                                            | 4      | 0 | s08 |
| .....uaucccacuuugucacuuugu.....                                                            | 1      | 0 | s08 |
| .....uaucccacuuugucacuuugua.....                                                           | 1      | 0 | s08 |
| .....ucccacuuugucacuuuguauu.....                                                           | 2      | 0 | s08 |
| .....cacucgccuaaaggcucguguguaauaccga.....                                                  | 1      | 0 | s08 |
| .....cucgccuaaaggcucgugugua.....                                                           | 1      | 0 | s08 |
| .....cucgccuaaaggcucguguguaauaccgaga.....                                                  | 1      | 0 | s08 |
| .....ccuaaaggcucguguguaauacc.....                                                          | 1      | 0 | s08 |
| .....agaaaauacaagugacucg.....                                                              | 1      | 0 | s08 |
| .....uacaagugacucgugggga.....                                                              | 2      | 0 | s08 |
| .....uacaagugacucguggggaauuuccau.....                                                      | 1      | 0 | s08 |
| .....caagugacucguggggaauuu.....                                                            | 3      | 0 | s08 |
| .....agugacucguggggaauuu.....                                                              | 1      | 0 | s08 |

| Star                                                                                                                                                                                              | Mature |   |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---|-----|
| uauacuauggaauaucccacuuugucacuu <u>g</u> ua <u>uuu</u> uac <u>u</u> ggc <u>au</u> acacacucg <u>cc</u> uaaagggcucgugugua <u>u</u> accgagaaaa <u>ua</u> caagugacucguggg <u>gau</u> auu <u>cc</u> aua |        |   |     |
| .....agugacucguggg <u>gau</u> auu <u>cc</u> ...                                                                                                                                                   | 9      | 0 | s08 |
| .....agugacucguggg <u>gau</u> auu <u>cc</u> U...                                                                                                                                                  | 3      | 1 | s08 |
| .....agugacucguggg <u>gau</u> auu <u>cca</u> ...                                                                                                                                                  | 3      | 0 | s08 |
| .....agugacucguggg <u>gau</u> auu <u>cc</u> G...                                                                                                                                                  | 1      | 1 | s08 |
| .....agugacucguggg <u>gau</u> auu <u>cc</u> au...                                                                                                                                                 | 1      | 0 | s08 |
| .....gugacucguggg <u>gau</u> auu <u>cc</u> ...                                                                                                                                                    | 1      | 0 | s08 |
| .....ugacucguggg <u>gau</u> auu <u>cc</u> au...                                                                                                                                                   | 2      | 0 | s08 |
| .....ugacucguggg <u>gau</u> auu <u>cca</u> G...                                                                                                                                                   | 2      | 1 | s08 |
| .....gaa <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> .....                                                                                                                                          | 2      | 0 | s18 |
| .....aa <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g.....                                                                                                                                          | 3      | 0 | s18 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>u</u> .....                                                                                                                                 | 1      | 0 | s18 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> u.....                                                                                                                                | 1      | 0 | s18 |
| .....cacacucg <u>cc</u> uaaagggcucg.....                                                                                                                                                          | 1      | 0 | s18 |
| .....aa <u>u</u> acaagugacucgugggC.....                                                                                                                                                           | 2      | 1 | s18 |
| .....uacaagugacucguggg <u>gau</u> auu <u>cc</u> au...                                                                                                                                             | 1      | 0 | s18 |
| .....uacaagugacucguggg <u>gau</u> auu <u>cc</u> aua                                                                                                                                               | 2      | 0 | s18 |
| .....caagugacucguggg <u>gau</u> auu.....                                                                                                                                                          | 6      | 0 | s18 |
| .....caagugacucguggg <u>gau</u> auu <u>cc</u> ...                                                                                                                                                 | 1      | 0 | s18 |
| .....ugacucguggg <u>gau</u> auu <u>cc</u> aua                                                                                                                                                     | 1      | 0 | s18 |
| .....aa <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> C.....                                                                                                                                          | 1      | 1 | s05 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g.....                                                                                                                                           | 1      | 0 | s05 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>u</u> .....                                                                                                                                 | 1      | 0 | s05 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> .....                                                                                                                                | 2      | 0 | s05 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> uA.....                                                                                                                              | 2      | 1 | s05 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g.....                                                                                                                                            | 3      | 0 | s05 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> Gg.....                                                                                                                                           | 2      | 1 | s05 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>u</u> .....                                                                                                                                  | 4      | 0 | s05 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> u.....                                                                                                                                | 1      | 0 | s05 |
| .....caagugacucguggg <u>gau</u> auu.....                                                                                                                                                          | 3      | 0 | s05 |
| .....aagugacucguggg <u>gau</u> auu <u>cc</u> ...                                                                                                                                                  | 1      | 0 | s05 |
| .....agugacucguggg <u>gau</u> auu.....                                                                                                                                                            | 1      | 0 | s05 |
| .....agugacucguggg <u>gau</u> auu <u>cc</u> ...                                                                                                                                                   | 1      | 0 | s05 |
| uauacuauggaauau <u>cc</u> ca.....                                                                                                                                                                 | 2      | 0 | s02 |
| uauacuauggaauau <u>cc</u> ca <u>c</u> u.....                                                                                                                                                      | 3      | 0 | s02 |
| ..uacuauggaauau <u>cc</u> ca <u>c</u> u.....                                                                                                                                                      | 3      | 0 | s02 |
| ..uggaauau <u>cc</u> ca <u>c</u> uu <u>g</u> ucac.....                                                                                                                                            | 1      | 0 | s02 |
| .....uggaauau <u>cc</u> ca <u>c</u> uu <u>g</u> ucac <u>u</u> g <u>u</u> .....                                                                                                                    | 4      | 0 | s02 |
| .....aa <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> .....                                                                                                                                           | 2      | 0 | s02 |
| .....aa <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g.....                                                                                                                                          | 11     | 0 | s02 |
| .....aa <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>u</u> .....                                                                                                                                | 4      | 0 | s02 |
| .....aa <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> gG.....                                                                                                                                         | 1      | 1 | s02 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g.....                                                                                                                                           | 6      | 0 | s02 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>u</u> .....                                                                                                                                 | 17     | 0 | s02 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> .....                                                                                                                                | 10     | 0 | s02 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> G.....                                                                                                                               | 1      | 1 | s02 |
| .....a <u>u</u> aucccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> u.....                                                                                                                               | 3      | 0 | s02 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>u</u> .....                                                                                                                                  | 11     | 0 | s02 |
| .....ua <u>u</u> cccacCugucac <u>u</u> g <u>ua</u> .....                                                                                                                                          | 2      | 1 | s02 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> A <u>u</u> a.....                                                                                                                                 | 1      | 1 | s02 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> .....                                                                                                                                 | 17     | 0 | s02 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> u.....                                                                                                                                | 3      | 0 | s02 |
| .....ua <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> uA.....                                                                                                                               | 5      | 1 | s02 |
| .....ua <u>u</u> cccacuu <u>g</u> A <u>ca</u> c <u>u</u> g <u>ua</u> u.....                                                                                                                       | 3      | 1 | s02 |
| .....a <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> .....                                                                                                                                  | 1      | 0 | s02 |
| .....a <u>u</u> cccacuu <u>g</u> ucac <u>u</u> g <u>ua</u> uA.....                                                                                                                                | 2      | 1 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> u.....                                                                                                                                    | 5      | 0 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> uA.....                                                                                                                                   | 11     | 0 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> uA.....                                                                                                                                   | 3      | 1 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> C.....                                                                                                                                    | 5      | 1 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> uA.....                                                                                                                                   | 1      | 1 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> uA.....                                                                                                                                   | 1      | 1 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> uu.....                                                                                                                                   | 2      | 0 | s02 |
| .....u <u>cc</u> ca <u>u</u> gucac <u>u</u> g <u>ua</u> uuA.....                                                                                                                                  | 1      | 0 | s02 |
| .....cc <u>u</u> gucac <u>u</u> g <u>ua</u> u.....                                                                                                                                                | 2      | 0 | s02 |
| .....cu <u>u</u> aaagggcucgugugua <u>u</u> accgagaaaa.....                                                                                                                                        | 2      | 0 | s02 |
| .....cu <u>u</u> aaagggcucgugugua <u>u</u> accgagaaaa <u>u</u> .....                                                                                                                              | 2      | 0 | s02 |
| .....ucgugugua <u>u</u> accgagaaaa.....                                                                                                                                                           | 1      | 0 | s02 |

| Star                                                                                                                                                  | Mature |   |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---|-----|
| uauacuauggaauauccacacuuugucacuuuguaauuuacuuggc <u>auacacacucg</u> ccuaaaggcucgugugua <u>uaccgag</u> aaaa <u>ua</u> caagugacucguggggauuu <u>cc</u> aua |        |   |     |
| .....ucgugugua <u>uaccgag</u> aaaa <u>ua</u> .....                                                                                                    | 4      | 0 | s02 |
| .....cgugugua <u>uaccgag</u> aaaa.....                                                                                                                | 1      | 0 | s02 |
| .....cgugugua <u>uaccgag</u> aaaa.....                                                                                                                | 3      | 0 | s02 |
| .....cgugugua <u>uaccgag</u> aaaa <u>ua</u> .....                                                                                                     | 1      | 0 | s02 |
| .....cgugugua <u>uaccgag</u> aaaa <u>uG</u> ca.....                                                                                                   | 1      | 1 | s02 |
| .....gugugua <u>uaccgag</u> aaaa.....                                                                                                                 | 1      | 0 | s02 |
| .....gugugua <u>uaccgag</u> aaaa <u>ua</u> .....                                                                                                      | 1      | 0 | s02 |
| .....uauaccgagaaaa <u>ua</u> caa.....                                                                                                                 | 1      | 0 | s02 |
| .....uauaccgagaaaa <u>ua</u> caagC.....                                                                                                               | 2      | 1 | s02 |
| .....uauaccgagaaaa <u>ua</u> caagu.....                                                                                                               | 12     | 0 | s02 |
| .....aaaa <u>ua</u> caagugacucgugg.....                                                                                                               | 1      | 0 | s02 |
| .....aaaa <u>ua</u> caagugacucguUgg.....                                                                                                              | 1      | 1 | s02 |
| .....aaaa <u>ua</u> caagugacucgugggU.....                                                                                                             | 1      | 1 | s02 |
| .....aaaa <u>ua</u> caagugacucgug.....                                                                                                                | 2      | 0 | s02 |
| .....aaaa <u>ua</u> caagugacucgugggaua.....                                                                                                           | 1      | 0 | s02 |
| .....uacaagugacucgugggaua.....                                                                                                                        | 10     | 0 | s02 |
| .....uacaagugacucgugggauu.....                                                                                                                        | 1      | 0 | s02 |
| .....uacaagugacucgugggauA.....                                                                                                                        | 1      | 1 | s02 |
| .....uacaagugacucgugggauuuccGu.....                                                                                                                   | 1      | 1 | s02 |
| .....caagugacucgugggauu.....                                                                                                                          | 1      | 0 | s02 |
| .....caagugacucgugggauuu.....                                                                                                                         | 113    | 0 | s02 |
| .....caagugacucgugggauuuA.....                                                                                                                        | 4      | 1 | s02 |
| .....caagugacucgugggauuuuc.....                                                                                                                       | 1      | 0 | s02 |
| .....caagugacucgugggauuuucc.....                                                                                                                      | 1      | 0 | s02 |
| .....caagugacucgugggauuuucU.....                                                                                                                      | 2      | 1 | s02 |
| .....aagugacucgugggauu.....                                                                                                                           | 4      | 0 | s02 |
| .....aagugacucgugggauuu.....                                                                                                                          | 9      | 0 | s02 |
| .....aagugCucgugggauuu.....                                                                                                                           | 1      | 1 | s02 |
| .....aagugacucgugggauuuuc.....                                                                                                                        | 3      | 0 | s02 |
| .....aagugacucgugggauuuucc.....                                                                                                                       | 1      | 0 | s02 |
| .....aagugacucgugggauuuucU.....                                                                                                                       | 1      | 1 | s02 |
| .....aagugacucgugggauuuucUau.....                                                                                                                     | 1      | 1 | s02 |
| .....agugacucgugggauuu.....                                                                                                                           | 35     | 0 | s02 |
| .....agugacucgugggauuuuc.....                                                                                                                         | 12     | 0 | s02 |
| .....agugacucgugggauuuucc.....                                                                                                                        | 34     | 0 | s02 |
| .....agugacucgugggauuuucU.....                                                                                                                        | 12     | 1 | s02 |
| .....agugacucgugggauuuucca.....                                                                                                                       | 32     | 0 | s02 |
| .....agugacucgugggauuuuccaA.....                                                                                                                      | 1      | 1 | s02 |
| .....agugacucgugggauuuuAcaua.....                                                                                                                     | 1      | 1 | s02 |
| .....agugacucgugggauuuuccaGa.....                                                                                                                     | 1      | 1 | s02 |
| .....gugacucgugggauuuucUaua.....                                                                                                                      | 2      | 1 | s02 |
| .....ugacucgugggauuuucca.....                                                                                                                         | 6      | 0 | s02 |
| .....ugacucgugggauuuuccau.....                                                                                                                        | 1      | 0 | s02 |
| .....ugacucgugggauuuuccaua.....                                                                                                                       | 3      | 0 | s02 |
| .....ugacucgugggauuuuccauC.....                                                                                                                       | 1      | 1 | s02 |
| .....uccacacuuugucacuuugauu.....                                                                                                                      | 1      | 0 | s11 |
| .....cacucgccuaaaggcucgugugua <u>uaccg</u> a.....                                                                                                     | 1      | 0 | s11 |
| .....caagugacucgugggauuu.....                                                                                                                         | 2      | 0 | s11 |
| .....agugacucgugggauuuucc.....                                                                                                                        | 1      | 0 | s11 |
| .....aa <u>ua</u> uuccacacuuugucacuuug.....                                                                                                           | 2      | 0 | s10 |
| .....ua <u>ua</u> uuccacacuuugucacuuugu.....                                                                                                          | 3      | 0 | s10 |
| .....ua <u>ua</u> uuccacacuuugucacuuugua.....                                                                                                         | 4      | 0 | s10 |
| .....ua <u>ua</u> uuccacCugucacuuugua.....                                                                                                            | 2      | 1 | s10 |
| .....uccacacuuugucacuuugauu.....                                                                                                                      | 1      | 0 | s10 |
| .....uuuCuugggc <u>auacacacucg</u> c.....                                                                                                             | 1      | 1 | s10 |
| .....uuuGcuugggc <u>auacacacucg</u> c.....                                                                                                            | 1      | 1 | s10 |
| .....cucgccuaaaggcucgugugua.....                                                                                                                      | 1      | 0 | s10 |
| .....cgagaaaa <u>ua</u> caagugacu.....                                                                                                                | 1      | 0 | s10 |
| .....aaaa <u>ua</u> caagugacucgu.....                                                                                                                 | 1      | 0 | s10 |
| .....caagugacucgugggauuu.....                                                                                                                         | 5      | 0 | s10 |
| .....agugacucgugggauuuucc.....                                                                                                                        | 2      | 0 | s10 |
| .....ugacucgugggauuuucca.....                                                                                                                         | 2      | 0 | s10 |
| .....aa <u>ua</u> uuccacacuuugucacu.....                                                                                                              | 1      | 0 | s17 |
| .....aa <u>ua</u> uuccacacuuugucacuu.....                                                                                                             | 2      | 0 | s17 |
| .....aa <u>ua</u> uuccacacuuugucacuuug.....                                                                                                           | 1      | 0 | s17 |
| .....aa <u>ua</u> uuccacacuuugucacuuugu.....                                                                                                          | 1      | 0 | s17 |
| .....a <u>ua</u> uuccacacuuugucacuuuC.....                                                                                                            | 1      | 1 | s17 |

| Star                                                                                      | Mature |   |                           |
|-------------------------------------------------------------------------------------------|--------|---|---------------------------|
| uauacuauggaauauuccacuuugucacuuuguauuuuacuuggcauacacacucgccuaaaaggcucguguguaauaccgagaaaaua |        |   | caagugacucguggggauuuccaua |
| .....auauccacuuugucacuugua.....                                                           | 1      | 0 | s17                       |
| .....uauccacuuugucacuuugu.....                                                            | 1      | 0 | s17                       |
| .....uauccacuuugucacuugua.....                                                            | 2      | 0 | s17                       |
| .....uccacuuugucacuuuguauuu.....                                                          | 1      | 0 | s17                       |
| .....uacaagugacucgugggau.....                                                             | 1      | 0 | s17                       |
| .....caagugacucguggggauuu.....                                                            | 2      | 0 | s17                       |
| .....caagugacucguggggauuuc.....                                                           | 2      | 0 | s17                       |
| .....agugacucguggggauuu.....                                                              | 2      | 0 | s17                       |
| .....agugacucguggggauuuc.....                                                             | 1      | 0 | s17                       |
| .....agugacucguggggauuuucU.....                                                           | 2      | 1 | s17                       |
| .....agugacucguggggauuuucc.....                                                           | 2      | 0 | s17                       |
| .....agugacucguggggauuuucca.....                                                          | 7      | 0 | s17                       |
| .....aauauccacuuugucacuuug.....                                                           | 1      | 0 | s01                       |
| .....aauauccacuuugucacuuugu.....                                                          | 1      | 0 | s01                       |
| .....auauccacuuugucacuu.....                                                              | 1      | 0 | s01                       |
| .....uauccacuuugucacuuug.....                                                             | 8      | 0 | s01                       |
| .....uauccacuuugucacuuugu.....                                                            | 2      | 0 | s01                       |
| .....uauccacuuugucacuugua.....                                                            | 1      | 0 | s01                       |
| .....auccacuuugucacuuugu.....                                                             | 1      | 0 | s01                       |
| .....agaaaauacaagugacucg.....                                                             | 1      | 0 | s01                       |
| .....auacaagugacucgugggau.....                                                            | 3      | 0 | s01                       |
| .....uacaagugacucgugggaua.....                                                            | 3      | 0 | s01                       |
| .....caagugacucguggggauau.....                                                            | 2      | 0 | s01                       |
| .....caagugacucguggggaUuu.....                                                            | 1      | 1 | s01                       |
| .....caagugacucguggggauuu.....                                                            | 6      | 0 | s01                       |
| .....caagugacucguggggauuuc.....                                                           | 1      | 0 | s01                       |
| .....aagugacucguggggauuu.....                                                             | 1      | 0 | s01                       |
| .....agugacucguggggauuu.....                                                              | 1      | 0 | s01                       |
| .....agugacucguggggauuuucc.....                                                           | 8      | 0 | s01                       |
| .....agugacucguggggauuuucca.....                                                          | 5      | 0 | s01                       |
| .....aauauccacuuugucacu.....                                                              | 3      | 0 | s13                       |
| .....aauauccacuuugucacuu.....                                                             | 3      | 0 | s13                       |
| .....aauauccacuuugucacuuug.....                                                           | 5      | 0 | s13                       |
| .....auauccacuuugucacuu.....                                                              | 1      | 0 | s13                       |
| .....auauccacuuugucacuuug.....                                                            | 6      | 0 | s13                       |
| .....auauccacuuugucacuuuguauA.....                                                        | 2      | 1 | s13                       |
| .....uauccacuuugucacuuug.....                                                             | 15     | 0 | s13                       |
| .....uauccacuuugAcacuuug.....                                                             | 1      | 1 | s13                       |
| .....uauccacuuugucacuuugu.....                                                            | 3      | 0 | s13                       |
| .....uauccacuuugucacuugua.....                                                            | 1      | 0 | s13                       |
| .....uauccacuuugucacuuuguauA.....                                                         | 1      | 1 | s13                       |
| .....uccacuuugucacuuuguauuA.....                                                          | 1      | 1 | s13                       |
| .....cuaaaggcucguguguaauaccgagaaaau.....                                                  | 1      | 0 | s13                       |
| .....agaaaauacaagugacucgu.....                                                            | 1      | 0 | s13                       |
| .....aaaauacaagugacucguggg.....                                                           | 1      | 0 | s13                       |
| .....uacaagugacucgugggaua.....                                                            | 1      | 0 | s13                       |
| .....uacaagugacucguggggauu.....                                                           | 2      | 0 | s13                       |
| .....caagugacucguggggaua.....                                                             | 1      | 0 | s13                       |
| .....caagugacucguggggauuu.....                                                            | 18     | 0 | s13                       |
| .....caagugGcucguggggauuu.....                                                            | 1      | 1 | s13                       |
| .....caagugacucguggggauuuc.....                                                           | 1      | 0 | s13                       |
| .....caagugacucguggggauuuAc.....                                                          | 1      | 1 | s13                       |
| .....agugacucguggggauuu.....                                                              | 28     | 0 | s13                       |
| .....agugGcucguggggauuu.....                                                              | 1      | 1 | s13                       |
| .....agugacucguUggauuu.....                                                               | 2      | 1 | s13                       |
| .....agugacucguggggauuuc.....                                                             | 10     | 0 | s13                       |
| .....agugacucguUggauuuc.....                                                              | 1      | 1 | s13                       |
| .....agugacucguggggauuuucU.....                                                           | 3      | 1 | s13                       |
| .....agugacucguggggauuuucca.....                                                          | 11     | 0 | s13                       |
| .....agugacucguggggauuuuccau.....                                                         | 1      | 0 | s13                       |
| .....auauccacuuugucacuuug.....                                                            | 1      | 0 | s12                       |
| .....auauccacuuugucacuuuguauA.....                                                        | 1      | 1 | s12                       |
| .....auauccacuuugucacuuuguauu.....                                                        | 1      | 0 | s12                       |
| .....uauccacuuugucacuuug.....                                                             | 1      | 0 | s12                       |
| .....auccacuuugucacuuuguauu.....                                                          | 1      | 0 | s12                       |
| .....auccacuuugucacuuuguauGu.....                                                         | 1      | 1 | s12                       |
| .....auccacuuugucacuuuguauA.....                                                          | 3      | 1 | s12                       |

## Star

## Mature

|                                                                                                                                              |   |   |     |
|----------------------------------------------------------------------------------------------------------------------------------------------|---|---|-----|
| uauacuauggaauau <u>cccacuuugucacuuugu</u> uauuuu <u>cuugggcauacacacucgccu</u> aaaggcucgugugua <u>uaccgagaaaauacaagugacucgugggauauu</u> ccaua |   |   |     |
| .....ucccacuuugucacuuuguauu.....                                                                                                             | 5 | 0 | s12 |
| .....cucgccuaaaggcucgugugua <u>uaccgaga</u> .....                                                                                            | 1 | 0 | s12 |
| .....cu <u>aaaggcucguguguaugccgagaaaau</u> .....                                                                                             | 1 | 1 | s12 |
| .....agaaaauacaagugacucgu.....                                                                                                               | 1 | 0 | s12 |
| .....Caaaauacaagugacucguggga.....                                                                                                            | 1 | 1 | s12 |
| .....aaauacaagugacucgugggU.....                                                                                                              | 1 | 1 | s12 |
| .....uacaagugacucgugggauau.....                                                                                                              | 5 | 0 | s12 |
| .....caagugacucgugggauau.....                                                                                                                | 1 | 0 | s12 |
| .....caagugacucgugggauauu.....                                                                                                               | 6 | 0 | s12 |
| .....aagugacucgugggauauu.....                                                                                                                | 2 | 0 | s12 |
| .....agugacucgugggauauu.....                                                                                                                 | 2 | 0 | s12 |
| .....agugacucgugggauauucU.....                                                                                                               | 1 | 1 | s12 |
| .....agugacucgugggauauucca.....                                                                                                              | 1 | 0 | s12 |
| .....agugacucgugggauauuuccauC.....                                                                                                           | 1 | 1 | s12 |
| .....ugacucgugggauauuuccau.....                                                                                                              | 1 | 0 | s12 |
| .....ugacucgugggauauuuccGu.....                                                                                                              | 2 | 1 | s12 |
| .....ugacucgugggauauuuccaua.....                                                                                                             | 4 | 0 | s12 |
| .....ucccacuuugucacuuuguauC.....                                                                                                             | 1 | 1 | s14 |
| .....aaaauacaagugacucgu.....                                                                                                                 | 4 | 0 | s14 |
| .....caagugacucgugggauauu.....                                                                                                               | 1 | 0 | s14 |
| .....agugacucgugggauauuucc.....                                                                                                              | 3 | 0 | s14 |
| .....agugacucgugggauauucca.....                                                                                                              | 2 | 0 | s14 |
| .....uauuggaauUucccacuuugucacu.....                                                                                                          | 2 | 1 | s19 |
| .....uaucccacuuugucacuug.....                                                                                                                | 1 | 0 | s19 |
| .....ucccacuuugucacuuuguauu.....                                                                                                             | 1 | 0 | s19 |
| .....uauaccgagaaaauacaagu.....                                                                                                               | 1 | 0 | s19 |
| .....cgagaaaauacaagugacu.....                                                                                                                | 1 | 0 | s19 |
| .....agaaaauacaagugacucg.....                                                                                                                | 2 | 0 | s19 |
| .....auacaagugacucgugggau.....                                                                                                               | 1 | 0 | s19 |
| .....uacaagugacucgugggau.....                                                                                                                | 2 | 0 | s19 |
| .....caagugacucgugggauauu.....                                                                                                               | 9 | 0 | s19 |
| .....caagugacucgugggauauuuccau.....                                                                                                          | 1 | 0 | s19 |
| .....agugacucgugggauauuucc.....                                                                                                              | 2 | 0 | s19 |
| .....agugacucgugggauauucU.....                                                                                                               | 1 | 1 | s19 |
| .....agugacucgugggauauucca.....                                                                                                              | 5 | 0 | s19 |
| .....ugacucgugggauauucca.....                                                                                                                | 3 | 0 | s19 |
| .....ugacucgugggauauuuccau.....                                                                                                              | 1 | 0 | s19 |
| .....ugacucgugggauauuuccaua.....                                                                                                             | 4 | 0 | s19 |