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rRNA Secondary Structures

This site contains LSU and SSU rRNA secondary structures for a variety of species. Most of these secondary structures are derived from 3D structures and accurately portray all base pairs and helices as far as possible. For some species, one of the subunits is missing. It would be appreciated if you cite papers 1 and 2 below if you make extensive use of these images in a publication. Anton Petrov (anton.petrov@biology.gatech.edu) and Loren Williams (ldw@gatech.edu) along with other members of the Williams group constructed this gallery. We will extend the gallery as resources permit.

File Size & Format: The images are high resolution PNGs (so be patient when viewing and downloading). SVG versions of all of the images are located in zipped directories on the top level. SVG images are fully editable in object-oriented programs such as Inkscape or Adobe Illustrator. With the SVG images one can change fonts, move individual objects such as nucleotides, etc. For ease of editing and manipulation, the SVG images are set up so that once imported into Illustrator, various object classes (nucleotide letters, nucleotide circles, molecular interactions, etc) are each partitioned to individual sub-layers.

Eukaryotic Expansion Segment Names: We have followed the basic expansion element labeling scheme of Susan Gerbi (1996). We have unified helix naming schemes from various eukaryotic ribosomes.

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References and Citations

1. Petrov, A. S., Bernier, C. R., Gulen, B., Waterbury, C. C., Hershkovitz, E., Hsiao, C., Harvey, S. C., Hud, N. V., Fox, G. E., Wartell, R. M., and Williams, L. D. (2014) *Secondary Structures of rRNAs from All Three Domains of Life*, PLoS One **9**, e88222.
2. Petrov, A. S., Bernier, C. R., Hershkovitz, E., Xue, Y., Waterbury, C. C., Grover, M. A., C., H. S., Hud, N. V., Wartell, R. M., and Williams, L. D. (2013) *Secondary Structure and Domain Architecture of the 23S rRNA*, Nucleic Acids Res. **41**, 7522-7535.
3. Bernier, C., Petrov, A. S., Waterbury, C., Jett, J., Li, F., Freil, L. E., Xiong, B., Wang, L., Le, A., Milhouse, B. L., Hershkovitz, E., Grover, M., Xue, Y., Hsiao, C., Bowman, J. C., Harvey, S. C., Wartel, J. Z., and Williams, L. D. (2014) *RiboVision: Visualization and Analysis of Ribosomes*, Faraday Discuss. **169**, 1-12.