

tRNA semiotics, fragmented ciphers and modern palimpsests

Juan D. Alfonzo

Department of Microbiology, Center for RNA Biology and The Ohio State Biochemistry Program.
The Ohio State University, Columbus, Ohio 43210, USA. (Alfonzo.1@osu.edu)

Some have accepted the RNA world as a likely intermediate for the appearance of life on earth; others have favored alternative hypotheses, which are also fraught with criticisms. Regardless of what side of the argument one may favor, there is consensus on an important step in evolution when the information found in nucleic acids was finally coupled to that in proteins culminating in our extant protein-nucleic acid world. No molecule has played a more indispensable role in such a critical transition than the transfer RNA, the ultimate interpreter of the genetic code. Undoubtedly, the elucidation of the code was a watershed moment in biology; however, as time passes, changes in our understanding have led to several rewritings of the cipher of life, finally yielding a written-over parchment full of hidden meanings and biological nuances. My lecture will provide a brief history of tRNA research, highlight recent findings and expand into what the future holds. Although not always obvious, new details are yet to be discovered of the many levels tRNA can control and affect a cell's function. It suffices to say that the future of the tRNA world is bright!