

RNA

A PUBLICATION OF THE RNA SOCIETY

VOL. 25, NO. 5



MAY 2019

CONTENTS

Reviews

- Does functional specialization of ribosomes really exist? 521

Max B. Ferretti and Katrin Karbstein

- The search for a PKR code—differential regulation of protein kinase R activity by diverse RNA and protein regulators 539^{OA}

Charles Bou-Nader, Jackson M. Gordon, Frances E. Henderson, and Jinwei Zhang

Bioinformatics

- Predictive models of subcellular localization of long RNAs 557

Binyamin Zuckerman and Igor Ulitsky

- Going beyond base-pairs: topology-based characterization of base-multiplets in RNA 573

Sohini Bhattacharya, Ayush Jhunjunwala, Antarip Halder, Dhananjay Bhattacharyya, and Abhijit Mitra

Report

- Programmable RNA detection with a fluorescent RNA aptamer using optimized three-way junction formation 590

Yuichi Furuhashi, Mizuki Kobayashi, Ryo Maruyama, Yusuke Sato, Kurumi Makino, Tatsuo Michiue, Hiroharu Yui, Seiichi Nishizawa, and Keitaro Yoshimoto

Articles

- High-resolution crystal structures of ribosome-bound chloramphenicol and erythromycin provide the ultimate basis for their competition 600

Maxim S. Svetlov, Elena Plessa, Chih-Wei Chen, Anthony Bougas, Marios G. Krokidis, George P. Dinos, and Yury S. Polikanov

(continued)

Cover Illustration: Crystal structure of T. thermophilus 50S ribosomal protein L1 in complex with helices H76, H77, and H78 of 23S RNA (Protein Data Bank code: 5npm; Kostareva OS, Nevskaya NA, Tishchenko SV, Gabdulkhakov AG, Garber MB, Nikonov SV. 2018. Influence of nonconserved regions of L1 protuberance of Thermus thermophilus ribosome on the affinity of L1 protein to 23s rRNA [in Russian]. Mol Biol [Mosk] 52: 106–111). The RNA backbone is displayed as a red ribbon; bases are shown as blocks with NDB coloring: A—red, C—yellow, G—green, U—cyan; ribosomal protein L1 is shown as a silver ribbon. The image was generated using 3DNA/blocview and PyMol software. Cover image provided by the Nucleic Acid Database (ndbserver.rutgers.edu).

tRNA deamination by ADAT requires substrate-specific recognition mechanisms and can be inhibited by tRFs	607
<i>Helena Roura Frigolé, Noelia Camacho, Maria Castellví Coma, Carla Fernández-Lozano, Jorge García-Lema, Àlbert Rafels-Ybern, Albert Canals, Miquel Coll, and Lluís Ribas de Pouplana</i>	
Effects of the PIWI/MID domain of Argonaute protein on the association of miRNAi's seed base with the target	620^{OA}
<i>Zhen Wang, Yanli Wang, Taigang Liu, Yujie Wang, and Wenbing Zhang</i>	
Oncogenic splicing factor SRSF3 regulates ILF3 alternative splicing to promote cancer cell proliferation and transformation	630
<i>Rong Jia, Masahiko Ajiro, Lulu Yu, Philip McCoy Jr., and Zhi-Ming Zheng</i>	
Inhibition of human cytomegalovirus major capsid protein expression and replication by ribonuclease P-associated external guide sequences	645
<i>Qiudi Deng, Yujun Liu, Xin Li, Bin Yan, Xu Sun, Wei Tang, Phong Trang, Zhu Yang, Hao Gong, Yu Wang, Jie Lu, Jun Chen, Chuan Xia, Xiwen Xing, Sangwei Lu, and Fenyong Liu</i>	
RNA: Instructions for contributors	656

^{OA}Open Access paper