

MOSCOW STATE UNIVERSITY

INSTITUTE OF PROTEIN RESEARCH,  
RUSSIAN ACADEMY OF SCIENCES



# **The ribosome as a molecular machine: structure and functions.**

Conference  
on the occasion of the 80th birthday  
of Alexander Spirin

Moscow – Pushchino  
2011



Alexander S. Spirin

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# CONFERENCE PROGRAM

*Saturday, September 3*

*Institute of Protein Research, Pushchino*

12:00 Registration

*Sunday, September 4*

*Biology Faculty of Moscow State University, Lecture hall M-1*

9:00 Registration

9:45 **M. P. Kirpichnikov and L. P. Ovchinnikov**  
Opening

## Plenary Lecture

10:00- **M. M. Yusupov**

10:40 Crystal structure of bacterial and eukaryotic ribosomes

## Session 1. Dynamics within the Ribosome

Chairs: K. Nierhaus, N. A. Kisselev

10:40- **J. Frank**

11:20 Dynamics of the ribosome explored by cryoelectron microscopy

11:20- **J. D. Puglisi**

12:00 Dynamics of translation

**12:00 – 12:30 Coffee breake**

12:30- **D. N. Ermolenko and H. F. Noller**

13:00 Brownian ratchet mechanism of ribosome translocation

13:00- **A. S. Mankin**

13:30 New stories about an old antibiotic:  
the mechanism of action and the cell effect  
of erythromycin

13:30- **A. A. Bogdanov**

14:00 Ribosomal RNA as a transmitter of functional  
signals in the ribosome

**14:00 – 15:00 Lunch**

**Session 2. Functional Aspects**

Chairs: V. I. Agol, A. A. Bogdanov

15:00- **A. G. Ryazanov**

15:30 Ribosomes and cellular  $Mg^{2+}$  homeostasis

15:30- **K. H. Nierhaus**

16:00 70S scanning initiation, a new and frequent  
mode of bacterial initiation

16:00- **I. N. Shatsky**

16:30 Proteomic studies on picornovirus IRES-  
elements: an update

16:30- **M. Sprinzl**

17:00 Peptide bond formation on the ribosome

**17:00 – 17:15 Closing remarks**

**17:15 Wine-and-cheese party**

# ***Monday, September, 5***

*Institute of Protein Research, Pushchino, Conference Hall*

11:30 **A. A. Bogdanov**  
Opening

## **Plenary Lecture**

Chairs: L. P. Ovchinnikov, J. Frank

12:00 **A. S. Spirin**  
From the idea of locking-unlocking ribosomal subunits to the concept of the translating ribosome as a Brownian conveying machine

## **14:00 Picnic**

*The Institute Inner Garden*  
*(informal dress)*

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