

Curriculum vitae: Irina Boni

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Education

1970–1975	USSR, Moscow	Institute of bioorganic chemistry RAS	PhD on bioorganic chemistry
1965–1970	USSR, Moscow	Lomonosov Moscow State University, chemistry department	diploma, honors degree

IBCh positions

2021–to date	Senior research fellow
	Senior research fellow

Language Proficiency

Russian, English, French

Scientific societies' membership

RNA Society

American Society for Microbiology

Titles

Doctor of Philosophy (Chemistry)

Grants and projects

2018–2020	=
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Publications

1. Aseev LV, Koledinskaya LS, **Boni IV** (2024). Extraribosomal Functions of Bacterial Ribosomal Proteins—An Update, 2023. *Int J Mol Sci* 25 (5), 2957, [10.3390/ijms25052957](https://doi.org/10.3390/ijms25052957)
2. Grigorov AS, Skvortsova YV, Bychenko OS, Aseev LV, Koledinskaya LS, **Boni IV**, Azhikina TL (2023). Dynamic Transcriptional Landscape of Mycobacterium smegmatis under Cold Stress. *Int J Mol Sci* 24 (16), , [10.3390/ijms241612706](https://doi.org/10.3390/ijms241612706)
3. Aseev LV, Koledinskaya LS, Bychenko OS, **Boni IV** (2021). Regulation of Ribosomal Protein Synthesis in Mycobacteria: The Autogenous Control of rpsO. *Int J Mol Sci* 22 (18), , [10.3390/ijms22189679](https://doi.org/10.3390/ijms22189679)
4. Aseev LV, Koledinskaya LS, **Boni IV** (2020). Autogenous regulation in vivo of the rpmE gene encoding ribosomal protein L31 (bL31), a key component of the protein-protein intersubunit bridge B1b. *RNA* 26 (7), 814–826, [10.1261/ma.074237.119](https://doi.org/10.1261/ma.074237.119)
5. Caillet J, Baron B, **Boni IV**, Caillet-Saguy C, Hajnsdorf E (2019). Identification of protein-protein and ribonucleoprotein complexes containing Hfq. *Sci Rep* 9 (1), 14054, [10.1038/s41598-019-50562-w](https://doi.org/10.1038/s41598-019-50562-w)
6. Aseev LV, Koledinskaya LS, **Boni IV** (2016). Regulation of ribosomal protein operons rplM-rpsI, rpmB-rpmG, and rplU-rpmA at the transcriptional and translational levels. *J Bacteriol* 198 (18), 2494–2502, [10.1128/JB.00187-16](https://doi.org/10.1128/JB.00187-16)
7. Aseev LV, Bylinkina NS, **Boni IV** (2015). Regulation of the rplY gene encoding 5S rRNA binding protein L25

- in *Escherichia coli* and related bacteria. *RNA* 21 (5), 851–861, [10.1261/rna.047381.114](https://doi.org/10.1261/rna.047381.114)
8. Aseev LV, Koledinskaya LS, **Boni IV** (2014). Dissecting the extended “-10” *Escherichia coli* rpsB promoter activity and regulation in vivo. *Biochemistry (Mosc)* 79 (8), 776–784, [10.1134/S0006297914080057](https://doi.org/10.1134/S0006297914080057)
 9. Aseev LV, Chugunov AO, Efremov RG, **Boni IV** (2013). A single missense mutation in a coiled-coil domain of *Escherichia coli* ribosomal protein S2 confers a thermosensitive phenotype that can be suppressed by ribosomal protein S1. *J Bacteriol* 195 (1), 95–104, [10.1128/JB.01305-12](https://doi.org/10.1128/JB.01305-12)
 10. Hajnsdorf E, **Boni IV** (2012). Multiple activities of RNA-binding proteins S1 and Hfq. *Biochimie* 94 (7), 1544–1553, [10.1016/j.biochi.2012.02.010](https://doi.org/10.1016/j.biochi.2012.02.010)
 11. Aseev LV, **Boni IV** (2011). Extraribosomal functions of bacterial ribosomal proteins. *Mol Biol* 45 (5), 739–750, [10.1134/S0026893311050025](https://doi.org/10.1134/S0026893311050025)
 12. Le Derout J, **Boni IV**, Régnier P, Hajnsdorf E (2010). Hfq affects mRNA levels independently of degradation. *BMC Mol Biol* 11, 17, [10.1186/1471-2199-11-17](https://doi.org/10.1186/1471-2199-11-17)
 13. Aseev LV, Levandovskaya AA, Skaptsova NV, **Boni IV** (2009). Conservation of regulatory elements controlling the expression of the rpsB-tsif operon in γ -proteobacteria. *Mol Biol* 43 (1), 101–107, [10.1134/S0026893309010142](https://doi.org/10.1134/S0026893309010142)
 14. Aseev LV, Levandovskaia AA, Skaptsova NV, **Boni IV** (2009). Conservation of the regulatory elements implicated in the control of the rpsB-tsif operon expression in gamma-proteobacteria. *Mol Biol (Mosk)* 43 (1), 111–118.
 15. Aseev LV, Levandovskaya AA, Tchufistova LS, Skaptsova NV, **Boni IV** (2008). A new regulatory circuit in ribosomal protein operons: S2-mediated control of the rpsB-tsif expression in vivo. *RNA* 14 (9), 1882–1894, [10.1261/rna.1099108](https://doi.org/10.1261/rna.1099108)
 16. **Boni IV** (2006). Diverse molecular mechanisms of translation initiation in prokaryotes. *Mol Biol* 40 (4), 587–596, [10.1134/S002689330604011X](https://doi.org/10.1134/S002689330604011X)
 17. Ziolkowska K, Derreumaux P, Folichon M, Pellegrini O, Régnier P, **Boni IV**, Hajnsdorf E (2006). Hfq variant with altered RNA binding functions. *Nucleic Acids Res* 34 (2), 709–720, [10.1093/nar/gkj464](https://doi.org/10.1093/nar/gkj464)
 18. Komarova AV, Tchufistova LS, Aseev LV, **Boni IV** (2005). An *Escherichia coli* strain producing a leaderless mRNA from the chromosomal lac promoter. *Bioorg Khim* 31 (5), 557–560.
 19. Komarova AV, Tchufistova LS, Aseev LV, **Boni IV** (2005). An *Escherichia coli* strain producing a leaderless mRNA from the chromosomal lac promoter. *Russ. J. Bioorganic Chem.* 31 (5), 502–505, [10.1007/s11171-005-0069-6](https://doi.org/10.1007/s11171-005-0069-6)
 20. Komarova AV, Tchufistova LS, Dreyfus M, **Boni IV** (2005). AU-rich sequences within 5' untranslated leaders enhance translation and stabilize mRNA in *Escherichia coli*. *J Bacteriol* 187 (4), 1344–1349, [10.1128/JB.187.4.1344-1349.2005](https://doi.org/10.1128/JB.187.4.1344-1349.2005)
 21. Tchufistova LS, Komarova AV, **Boni IV** (2003). A key role for the mRNA leader structure in translational control of ribosomal protein S1 synthesis in γ -proteobacteria. *Nucleic Acids Res* 31 (23), 6996–7002, [10.1093/nar/gkg883](https://doi.org/10.1093/nar/gkg883)
 22. Komarova AV, Tchufistova LS, Supina EV, **Boni IV** (2002). Protein S1 counteracts the inhibitory effect of the extended Shine-Dalgarno sequence on translation. *RNA* 8 (9), 1137–1147, [10.1017/S1355838202029990](https://doi.org/10.1017/S1355838202029990)
 23. Komarova AV, Tchufistova LS, Supina EV, **Boni IV** (2001). Extensive Complementarity of the Shine-Dalgarno Region and 3'-End of 16S rRNA Is Inefficient for Translation in vivo. *Russ. J. Bioorganic Chem.* 27 (4), 248–255, [10.1023/A:1011356520576](https://doi.org/10.1023/A:1011356520576)
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 28. Artamonova VS, Tsareva NV, **Boni IV** (1998). Regulation of the Ribosomal L7/12 Protein Synthesis: The Role of the Intercistronic rplJL Region as a Translational Enhancer. *Bioorg Khim* 24 (7), 537–538.

29. Poot RA, Tsareva NV, **Boni IV**, Van Duin J (1997). RNA folding kinetics regulates translation of phage MS2 maturation gene. *Proc Natl Acad Sci U S A* 94 (19), 10110–10115, [10.1073/pnas.94.19.10110](https://doi.org/10.1073/pnas.94.19.10110)
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31. Birikh KR, Lebedenko EN, **Boni IV**, Berlin YA (1995). A high-level prokaryotic expression system: synthesis of human interleukin 1 α and its receptor antagonist. *Gene* 164 (2), 341–345, [10.1016/0378-1119\(95\)00488-R](https://doi.org/10.1016/0378-1119(95)00488-R)
32. Tzareva NV, Makhno VI, **Boni IV** (1994). Ribosome-messenger recognition in the absence of the Shine-Dalgarno interactions. *FEBS Lett* 337 (2), 189–194, [10.1016/0014-5793\(94\)80271-8](https://doi.org/10.1016/0014-5793(94)80271-8)
33. Tsareva NV, Muzychenko ML, **Boni IV** (1993). Analysis of the secondary structure of the regulatory region of mRNA of the Escherichia coli rpsA gene. *Russ. J. Bioorganic Chem.* 19 (10), 968–977.
34. **Boni IV**, Lsaeva DM, Musychenko ML, Tzareva NV (1991). Ribosome-messenger recognition: MRNA target sites for ribosomal protein S1. *Nucleic Acids Res* 19 (1), 155–162, [10.1093/nar/19.1.155](https://doi.org/10.1093/nar/19.1.155)
35. **Boni IV**, Isaeva DM (1988). Localization of RNA sites in bacteriophages Qbeta, fr and MS2 involved in interaction with ribosomal protein S1 during formation of complexes with 30S ribosomal subunit. *Dokl Akad Nauk SSSR* 298 (4), 1015–1018.
36. **BONI IV**, ZLATKIN IV, BUDOWSKY EI (1982). Ribosomal Protein S1 Associates with Escherichia coli Ribosomal 30-S Subunit by Means of Protein-Protein Interactions. *FEBS J* 121 (2), 371–376, [10.1111/j.1432-1033.1982.tb05796.x](https://doi.org/10.1111/j.1432-1033.1982.tb05796.x)
37. Budowsky EI, Simukova NA, Turchinsky MF, **Boni IV**, Skoblov YM (1976). Induced formation of covalent bonds between nucleoprotein components. V. UV or bisulfite induced polynucleotide-protein crosslinkage in bacteriophage MS2. *Nucleic Acids Res* 3 (1), 261–76, [10.1093/nar/3.1.261](https://doi.org/10.1093/nar/3.1.261)
38. **Boni IV**, Budowsky EI (1973). Transformation of non-covalent interactions in nucleoproteins into covalent bonds induced by nucleophilic reagents: I. The preparation and properties of the products of bisulfite ion-catalyzed reaction of amino acids and peptides with cytosine derivatives. *J Biochem* 73 (4), 821–830, [10.1093/oxfordjournals.jbchem.a130145](https://doi.org/10.1093/oxfordjournals.jbchem.a130145)