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Autophagy and RNA: Functional and Molecular Interplay in Health and Disease

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Deadline for manuscript
submissions:

closed (1 December 2021)

Message from the Guest Editors

The evolutionarily conserved process of autophagy serves to eliminate and recycle superfluous or damaged cellular components, with crucial importance for cellular physiology in health, infection and disease. Beyond its traditionally studied roles in maintaining protein, lipid and organelle homeostasis, increasing evidence indicates that autophagy can impact RNA homeostasis. Autophagy can degrade RNA, RNA-binding proteins (RBPs) and ribonucleoprotein (RNP) complexes and beyond its degradative capabilities, core autophagy players can additionally contribute to intracellular transport or extracellular release of RNA and related complexes. Autophagy itself is also regulated by RNAs and RBPs. During stress, when autophagy is enhanced, mRNA stability and translation is profoundly modulated and this allows selective processing and/or translation of key autophagy-related transcripts as part of these responses.

Keywords:

- RNA
- Autophagy
- Translation regulation
- Gene expression



mdpi.com/si/53903

Special Issue



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