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From Editor in Chief: The Nobel Prize in Physiology or Medicine 2024

The Nobel Prize in Physiology or Medicine has been awarded for the 114th time. This year's laureates are **Victor Ambros,** Silverman Professor of Natural Sciences at the University of Massachusetts Medical School in Worcester, and **Gary Ryvkun,** professor of genetics, a researcher at Massachusetts General Hospital and Harvard Medical School, where he is currently a professor. Their discovery of microRNAs (miRNAs), a class of endogenous single-stranded, short, noncoding RNAs, and their description of their function gained recognition in the eyes of the Nobel Committee. They showed that miRNAs mediate the inhibition of gene expression at the post-transcriptional level, and the efficiency and method of gene silencing depend on whether the miRNA has sufficient complementarity to the target mRNA. The first miRNA, lin-4, was discovered in *Caenorhabditis elegans* in 1993 [1, 2]; since then, many research teams, including the award-winning scientists, have dealt with this topic [3, 4]. MicroRNA has been suggested as a key factor playing a role in the pathogenesis of rheumatic and inflammatory diseases, cancers, and cardiovascular diseases in humans [4] (Fig. 1). Among other diseases, extensive research is ongoing regarding the role of miRNA in the pathogenesis of rheumatoid arthritis, and it has been suggested that miRNA may also be a potential target for therapy [5]. The epigenetic aspects of the pathogenesis of systemic lupus erythematosus and systemic sclerosis are also being intensively studied, especially the role of microRNA in these diseases [6, 7].

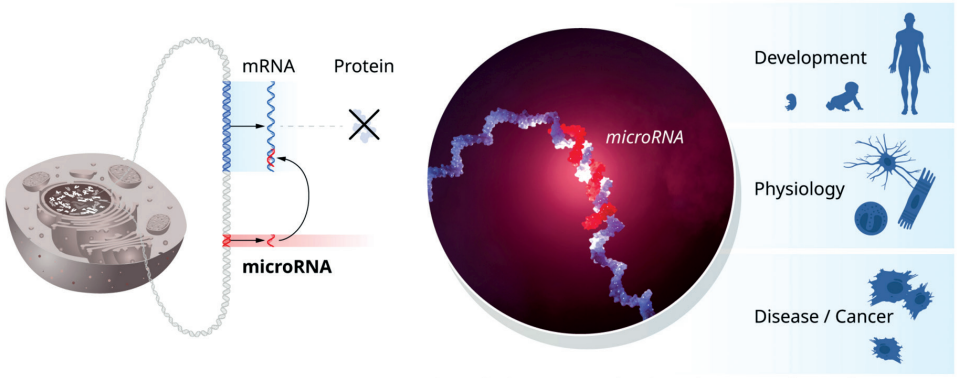

Fig. 1. The seminal discovery of microRNAs was unexpected and revealed a new dimension of gene regulation [4].

In conclusion, the 2024 Nobel Prize in Physiology or Medicine is particularly related to rheumatic diseases, and the further development of knowledge about this discovery deserves our special attention. Congratulations to the discoverers and their research teams on such an important and great achievement; we wish them further successes in the field of science.

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4. Press release. NobelPrize.org. Nobel Prize Outreach AB 2024. Thu. 7 Nov 2024. Available at: https://www.nobelprize.org/prizes/medicine/2024/press-release/ (Access: 28.10.2024).
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