
EDITORIAL NOTES

Phenoptosis. Preface to the Special Issue

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Academician Vladimir Petrovich Skulachev is one of the most famous and respected Russian scientists who had made a huge contribution to modern bioenergetics and biochemistry. One of his recent scientific achievements was the concept of phenoptosis proposed in 1999 [1]. This hypothesis builds on the ideas of August Weismann, who suggested the concept of programmed organism death as a mechanism that evolved through natural selection [2]. This mechanism serves to eliminate older individuals, freeing up space and resources for younger generations. Under phenoptosis, V. P. Skulachev understood “death of an organism programmed in its genome”. At the same time, the concept of phenoptosis is not directly opposed to the explanation of the aging phenomenon as a result of mutation accumulation, but complements it. This allows to have an “optimistic view” on the prospects of increasing the active life span by turning off the signals that cause aging [3]. V. P. Skulachev also explored the idea of fast or acute phenoptosis programs that could cause the rapid death of an organism, such as in severe infectious diseases [3].

The phenoptosis concept has led to numerous theoretical studies in this field and contributed to the emergence of new interesting trends in gerontology.

Since 2012, the journal *Biochemistry (Moscow)* has annually published Special Issues devoted to phenoptosis. Unfortunately, this year Vladimir Skulachev tragically died, but this was not an obstacle to continue this tradition.

This special issue contains experimental and theoretical articles that address the problems of phenoptosis, aging, and other related phenomena from various perspectives.

REFERENCES

1. Skulachev, V. P. (1999) Phenoptosis: programmed death of an organism, *Biochemistry (Moscow)*, **64**, 1418-1426.
2. Weismann, A. (1884) *Leben und Tod*, Verlag von Gustav Fisher, Jena, Germany, 85 pp.
3. Skulachev, V. P. (2012) What is “Phenoptosis” and how to fight it? *Biochemistry (Moscow)*, **77**, 827-846, doi: 10.1134/S0006297912070012.

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