Special Issue

Glycolysis in Tumorigenesis: Mechanisms and Therapeutic Implications

Message from the Guest Editors

Cells make most of their energy as ATP through glycolysis or oxidative metabolism. When oxygen is available, they use oxidative metabolism, but under low oxygen, they switch to less efficient glucose fermentation (Chandel, 2021).

Glycolysis, however, may become the predominant energy-producing pathway in tumors, even under aerobic conditions.

Glycolysis discharges two main tasks in tumors (Cordani et al. 2024). First, its conventional functions, i.e. the delivery of energy and precursors for biomass production. In addition, upregulated glycolytic enzymes may acquire new, unconventional functions, referred to as “moonlighting functions”: these include the induction of mutations and other tumor-initiating events, increased expression of oncoproteins, bypassing of senescence, induction of antiapoptotic effects and drug resistance.

Understanding glycolysis in tumor initiation and progression may provide new insights into cancer pathogenesis and guide the development of novel complementary therapies.

Chandel NS. Glycolysis. Cold Spring Harb Perspect Biol. 2021 May;13(5):a040535. doi: 10.1101/cshperspect.a040535.

Guest Editors

Dr. Fabrizio Marcucci

Dr. Shibo Wei

Dr. Marco Cordani

Deadline for manuscript submissions

1 April 2026

Cells

an Open Access Journal by MDPI

Impact Factor 5.2
CiteScore 10.5
Indexed in PubMed

mdpi.com/si/257146

Cells
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
cells@mdpi.com

mdpi.com/journal/cells

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Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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