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Growth Factor Signalling, Cellular Energy Metabolism and Obesity

Guest Editor:

Dr. Antje Garten

Hospital for Children and Adolescents, Center for Pediatric Research, Leipzig University, Liebigstr. 19 04103 Leipzig, Germany

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Message from the Guest Editor

Dear Colleagues,

The insulin/insulin-like growth factor (IGF) signaling pathway is a major signaling pathway that regulates cellular growth and survival. Insulin and IGF-I signal through a complex system of homo- and heterodimeric receptors and binding proteins to activate the phosphoinositid-3-kinase (PI3K)/AKT/mechanistic target of rapamycin (mTOR) pathway. mTOR complex 1 is a nutrient sensing kinase which balances cellular growth with autophagy. There is reciprocal regulation between the mTOR and another energy sensing network, the AMP-activated kinase (AMPK)—Sirtuin 1 axis, which is activated by a low cellular energy status, which negatively regulates mTORC1 activity.

In this Special Issue, we will take a closer look at the insulin/IGF-I signaling cascade, its cross-talk with AMPK and Sirtuin1 signaling pathways, pathogenetic changes of this network in obesity, and their impact on cellular energy metabolism in metabolic tissues.

Keywords

- insulin
- NAD
- mTOR
- nutrient sensing
- AMPK
- Sirtuin1



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Special Issue



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Cells Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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