



Signaling Pathways for Translation

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Book Condition: New. Publisher/Verlag: Springer, Berlin | Insulin and Nutrients | The articles in the present volume are by major contributors to our understanding of signaling pathways affecting protein synthesis. They focus primarily on two extracellular anabolic signals, although others are included as well. Insulin is one of the best-studied extracellular regulators of protein synthesis. Several of the known pathways for regulation of protein synthesis were elucidated using insulin-dependent systems. Regulation of protein synthesis by amino acids, by contrast, is an emerging field that has recently received a great deal of attention. The dual role of amino acids as substrates for protein synthesis and regulators of the overall process has only recently been recognized. Since amino acids serve as precursors for proteins, one might expect that withholding an essential amino acid would inhibit the elongation phase. Surprisingly, research has shown that it is the initiation phase of protein synthesis that is restricted during amino acid starvation. Understanding the mechanisms by which the biosynthesis of proteins is regulated is important for several reasons. Protein synthesis consumes a major portion of the cellular ATP that is generated. Therefore, small changes in protein synthesis can have...



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