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mTOR in Human Diseases

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The mechanistic target of rapamycin (mTOR) is a major signaling intermediary that coordinates favorable environmental conditions with cell growth. Indeed, as part of two functionally distinct protein complexes, named mTORC1 and mTORC2, mTOR regulates a variety of cellular processes, including protein, lipid, and nucleotide synthesis, as well as autophagy. Over the last two decades, major molecular advances have been made in mTOR signaling and have revealed the complexity of the events implicated in mTOR function and regulation. In parallel, the role of mTOR in diverse pathological conditions has also been identified, including in cancer, hamartoma, neurological, and metabolic diseases. Through a series of articles, this book focuses on the role played by mTOR in cellular processes, metabolism in particular, and highlights a panel of human diseases for which mTOR inhibition provides or might provide benefits. It also addresses future studies needed to further characterize the role of mTOR in selected disorders, which will help design novel therapeutic approaches. It is therefore intended for everyone who has an interest in mTOR biology and its application in human pathologies.

