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Foreword

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The mammalian Target of Rapamycin (mTOR) is a highly conserved serine/threonine protein kinase that has been shown to control numerous cell functions including initiation of mRNA translation, cell cycle progression and proliferation. Its role as a potential therapeutic target in anti-cancer therapy was validated by the clinical benefit observed in advanced renal cell cancer (RCC) patients treated with temsirolimus. Patients receiving single-agent temsirolimus had a statistically significant improvement in overall survival when compared to interferon. In May 2007, temsirolimus was approved by the United States Food and Drug Administration for the treatment of advanced RCC. There are a number of ongoing trials with agents that target mTOR in both solid tumors and hematologic malignancies, both as single-agent as well as part of combinations.

In this review, Drs Abdel-Karim and Giles provide a summary of the scientific background related to targeting mTOR in hematologic malignancies, the mTOR inhibitors that are currently in clinical trials and the disease indications within hematologic malignancies that are being studied. This excellent and concise review provides important information about the agents and the new target for anti-cancer therapy that is of importance to practicing hematologists and oncologists.

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