Ativação da AMPK pelo AICAR fosforila p53 e inibe ciclo celular no hepatocarcinoma

Cell cycle regulation via p53 phosphorylation by a 5'-AMP activated protein kinase activator, 5-aminoimidazole-4-carboxamide-1-beta-D-ribofuranoside, in a human hepatocellular carcinoma cell line.


Source

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Abstract

5-Aminoimidazole-4-carboxamide-1-beta-D-ribofuranoside (AICAR) is an activator of AMP activated protein kinase (AMPK) and a regulator of de novo purine synthesis. There are several earlier reports indicating that AICAR treatment suppresses cell growth via regulation of AMPK or de novo purine synthesis. We found cell growth to be suppressed by AICAR treatment in HepG2 because of p53 accumulation, which was associated with p53-Ser15 phosphorylation. Moreover, a motif very similar to the consensus motif of AMPK phosphorylation was found around p53-Ser15, and Ser15 phosphorylation was detected in AICAR treated HepG2 as was in vitro phosphorylation by AMPK. Our results suggest that AICAR may regulate cell growth via p53 phosphorylation, and also indicate the possibility of p53 phosphorylation.

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