

Publication

Activation of endoplasmic reticulum stress response by hepatitis viruses up-regulates protein phosphatase 2A

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The up-regulation of protein phosphatase 2 A (PP2A) is an important factor leading to an inhibition of IFNalpha signaling caused by viral protein expression. Here, we describe the molecular mechanism involved in PP2Ac up-regulation by HCV and HBV. HCV and HBV protein expression in cells induces an ER stress response leading to calcium release from the ER. HCV protein expression induces CREB activation, probably through calcium/calmodulin-dependent protein kinase. CREB binds to a CRE element in the promoter of PP2Ac and induces its transcriptional up-regulation. Because PP2Ac is involved in many important cellular processes including cell-cycle regulation, apoptosis, cell morphology, development, signal transduction and translation, its up-regulation during ER stress has potentially important implications.

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