Title	Functional characterization of the liver-enriched transcription factor CREB-H
Author(s)	Chin, KT; Wong, J; Ng, I; Jin, D
Citation	45th Annual Meeting of the American Society for Cell Biology, San Francisco, California, 10-14 December 2005, v. 16 n. Suppl
Issued Date	2005
URL	http://hdl.handle.net/10722/53996
Rights	Molecular Biology of the Cell. Copyright © American Society for Cell Biology.

Functional Characterization of the Liver-enriched Transcription Factor CREB-H

K. Chin,[1] J. Wong,[2] I. Ng,[2] D. Jin[1]; [1]Biochemistry, The University of Hong Kong, Pokfulam, Hong Kong Special Administrative Region of China, [2]Pathology, The University of Hong Kong, Pokfulam, Hong Kong Special Administrative Region of China

Presentation Number: 1989

Poster Board Number: B493

We have previously characterized transcription factor LZIP/CREB3 to be a growth suppressor targeted by hepatitis C virus oncoprotein. In search of proteins closely related to LZIP, we have identified a liver-enriched transcription factor CREB-H/CREB3L3. LZIP and CREB-H represent a new subfamily of bZIP factors. CREB-H activates transcription by binding to cAMP responsive element, box B, and ATF6/UPRE-binding element. Interestingly, CREB-H has a putative transmembrane domain and it localizes ambiently to the endoplasmic reticulum. Proteolytic cleavage that removes the transmembrane domain leads to nuclear translocation and activation of CREB-H. CREB-H activates the promoter of hepatic gluconeogenic enzyme phosphoenolpyruvate carboxykinase. This activation can be further stimulated by cAMP and protein kinase A. CREB-H transcript is exclusively abundant in adult liver. In contrast, the expression of CREB-H mRNA is aberrantly reduced in hepatoma tissues and cells. The enforced expression of CREB-H suppresses the proliferation of cultured hepatoma cells. Taken together, our findings suggest that the liver-enriched bZIP transcription factor CREB-H is a growth suppressor that plays a role in hepatic physiology and pathology.