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Manuscript Type: ORIGINAL ARTICLE

Basic Study

Extracellular histones stimulate collagen expression *in vitro* and promote liver fibrogenesis in a mouse model *via* the TLR4-MyD88 signaling pathway

Zhi Wang, Zhen-Xing Cheng, Simon T Abrams, Zi-Qi Lin, ED Yates, Qian Yu, Wei-Ping Yu, Ping-Sheng Chen, Cheng-Hock Toh, Guo-Zheng Wang

Abstract

BACKGROUND

Liver fibrosis progressing to liver cirrhosis and hepatic carcinoma is very common and

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<https://www.biorxiv.org/content/10.1101/2020.09.17.302240v1.full.pdf>

Sep 17, 2020 · **fibrogenesis** via the **TLR4-MyD88** signalling pathway. NAHP **detoxify extracellular histones** and thus has a **potential therapeutic role** by reducing **liver injury** and **fibrogenesis**.

Keywords: **Liver fibrosis**, **Extracellular histones**, Non-anticoagulant heparin, **TLR4**, **MyD88**, CCI 4

Core tip: This work fills the gap between recurrent **liver injury** and **liver fibrosis**.

Author: Zhi Wang, Zhenxing Cheng, Simon T... **Publish Year:** 2020

Extracellular histones stimulate collagen expression and ...

<https://www.biorxiv.org/content/10.1101/2020.09.17.302240v1> ▼

Sep 18, 2020 · CONCLUSION: This study demonstrated that **extracellular histones** are able to **stimulate HSC** to **produce collagen I** and **TLR4** is involved in this process. The in vivo findings support the novel concept that high levels of **circulating histones potentially stimulate TLR4 receptor** to enhance **fibrogenesis via the TLR4-MyD88** signalling pathway.

Author: Zhi Wang, Zhenxing Cheng, Simon T... **Publish Year:** 2020

Extracellular histones promote thrombin generation through ...

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3158722>

Aug 18, 2011 · **Histones promote** thrombin generation in PRP through platelet activation. We determined the effect of a natural mixture of **histones** on thrombin generation in human PRP as evaluated by CAT. No trigger was added to recalcified plasma to **increase** the sensitivity of the test to the procoagulant potential of platelets.

Cited by: 558 **Author:** Fabrizio Semeraro, Concetta T. Ammolli...

Publish Year: 2011

Phillygenin inhibits LPS-induced activation and ...

<https://www.sciencedirect.com/science/article/pii/S0378874119325085>

Feb 10, 2020 · According to the results of molecular docking, Western blot was applied to detect the proteins **expression** in **TLR4/MyD88/NF-κB signaling pathway**. As shown in Fig. 7 A. the results

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Publish Year: 2020

Role of High-Mobility Group Box-1 in Liver Pathogenesis

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6862281>

HMGB1 activates HSCs to **stimulate** liver fibrosis in the **in vitro** and in rodent models of fibrosis [22,41 ... HMGB1 activated the ERK **signaling pathway** via RAGE to increase the proliferation of DCs, suggesting that **extracellular** HMGB1 plays a mitogenic role during DR. ... The **extracellular** HMGB1 then triggered **TLR4/MyD88** signaling in hepatocytes ...

Cited by: 4

Author: Bilon Khambu, Shengmin Yan, Nazmul Hud...

Publish Year: 2019

Dong He's research works | Tsinghua University, Beijing ...

<https://www.researchgate.net/scientific-contributions/Dong-He-2128659260>

Reference: **Extracellular histones stimulate collagen expression and potentially promote liver fibrogenesis via TLR4-MyD88** signalling pathway Effects of ...

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<https://www.bioz.com/result/anti histone h3/product/abcam> ▾

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Author: Zhi Wang, Zhenxing Cheng, Zhenxing C... **Publish Year:** 2020

Extracellular Matrix Expression and Production in ...

<https://www.ncbi.nlm.nih.gov/pubmed/29873012>

Extracellular Matrix Expression and Production in Fibroblast-**Collagen** Gels: Towards an **In Vitro Model** for Ligament Wound Healing. ... In order to identify treatments that **stimulate collagen** alignment and...

Cited by: 2 **Author:** Stephanie M. Frahs, Julia Thom Oxford, Eri...

Publish Year: 2018

Dong He's research works | Tsinghua University, Beijing ...

<https://www.researchgate.net/scientific-contributions/Dong-He-2128659260>

Reference: **Extracellular histones stimulate collagen expression** and potentially **promote liver fibrogenesis via TLR4-MyD88 signalling pathway** Effects of ...

Extracellular histones induce tissue factor expression in ...

<https://www.sciencedirect.com/science/article/pii/S0049384815301468>

Jan 01, 2016 · Similarly to the HMGB1 protein, **extracellular histones** through the DAMPs' common receptor have a biological effect, and prior studies have reported that **histones**, through TLR receptors,...

Cited by: 64 **Author:** Xinyu Yang, Lin Li, Jin Liu, Ben Lv, Fangping...

Publish Year: 2016