## INTRODUCTION

Around 71 million people are infected with hepatitis C (HCV), and the number of deaths caused by HCV exceeds that of human immunodeficiency virus globally(HIV).<sup>1</sup>



Liver estrogen receptor (ER)-mediated sex-based differences have been shown in normal, cirrhosis and HCC.<sup>2</sup>

Liver ER is implicated in innate immunity in males and females.

Liver ER-binding may lead to protective effects in premenopausal women.



hydrophobic domain (HD), PAT-like domain (PAT) cofactor-binding domain (CFB), folding/dimerization domain (F/D) catalytic domain (CAT), and stability/unknown domain (S/U).

Why is this important? What is the societal impact? There are currently no biomarkers available to monitor HCV inflammation in the liver as it progresses to severe diseases.

Among the protein targets mapped by liver proteomics biomarkers study, we focused on  $17\beta$ -HSD13 that showed sex-based differential expression

**17** $\beta$ -HSD13 belongs to a 15-member family that is involved in various metabolic processes, including steroid hormones. The human HSD17B13 is lipid droplet associated protein that has been recently implicated in NAFLD pathogenesis.<sup>3</sup>

Staining •

Primary antibody

Antigen

Enzyme

### We hypothesized that chronic HCV infection leads to dysregulated $17\beta$ -HSD13 expression in male cirrhosis and progression to HCC.

METHODOLOGY



2.  $50\mu$ g/mL cytoplasmic protein were loaded on 4-12% polyacrylamide gel and transferred onto a nitrocellulose membrane.

3. Membranes were incubated with primary antibodies specific to  $17\beta$ -HSD13 or  $\beta$ -actin followed by fluorescence-conjugated secondary antibodies.

4. Immunoreactivity was visualized using LI-COR Odyssey CLX Imaging System. Protein densitometric analysis was determined using Image Studio Lite.

# RESULTS











### 17β-HSD13 has Sex-based differential expression in Hepatitis C Virus-induced Cirrhosis and Hepatocellular Carcinoma Carldon Deniega, Sachi Pathak, Logan Swope, Dorsa Hajimirsadeghi, Radhika Pande, Christy Eslinger, Anna Platt, Subhas Das, Daniel Zhao, Anil Kaul, Rashmi Kaul Department of Biochemistry and Microbiology, Oklahoma State University Center for Health Sciences, Tulsa, Oklahoma

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## RESULTS continued...

hronic HCV Infec