FOXF2 Controls Basal-like Breast Cancer Aggressiveness by Transrepression of FOXQ1

Jun Cai, Zi-Han Yu, Li-Juan Kang, Yu-Mei Feng*

In this study, we have demonstrated that FOXQ1 is a FOXF2 target gene. FOXF2 controls the aggressiveness and multidrug resistance of BLBC cells through the transrepression of FOXQ1. This finding provides new insight into the mechanism for obtaining aggressive characteristics of BLBC cells and suggests a therapeutic strategy targeting FOXF2-FOXQ1 axis for aggressive BLBC.

Background and purpose

Our previous studies have demonstrated that mesenchymal transcription factor forkhead box F2 (FOXF2) is specifically expressed in most basal-like breast cells but less in non-basal-like breast cells. FOXF2 deficiency enhances metastatic capability of basal-like breast cancer (BLBC) cells through inducing epithelial-mesenchymal transition (EMT). Based on the fact that transcription factor forkhead box Q1 (FOXQ1) promotes EMT and metastasis of BLBC, we investigated the mediated role of FOXQ1 in FOXF2-controlled BLBC aggressiveness.

Results

A FOXQ1 promoter

B FOXF2 directly transrepresses FOXQ1 expression in BLBC cells.

C FOXQ1 mediates FOXF2-regulated EMT phenotype of BLBC cells.

D FOXQ1 mediates FOXF2-regulated aggressive behavior and multidrug resistant of BLBC cells.

Further goals

The regulatory mechanism of subtype-specific expression and transcrepression function of FOXF2 in breast cancer will be investigated in our further studies.

E-mail: fengymei@126.com
Phone: +86-22-23340123 ext. 6002
Web: www.tjmuch.com/ylyjzx/shjfz/

Tianjin Medical University Cancer Institute and Hospital
Yu-Mei Feng
Prof. of Department of Biochemistry and Molecular Biology
Tianjin 300060, China.