



جامعة الإمارات العربية المتحدة
United Arab Emirates University

**The College of Graduate Studies and the College of Science Cordially Invite
You to a**

Master Thesis Defense

Entitled

MODELLING THE MICROENVIRONMENT OF LIVER CANCER USING 3D CULTURE SYSTEM

by

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Date & Venue

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Abstract

Tumor microenvironment has been the focus of many studies that highlighted its essential contribution to tumorigenesis. A two-way communication between the tumor and the surrounding microenvironment sustains and contributes to the growth and metastasis of the tumor by several means, such as extracellular matrix remodeling, fibroblasts activation, epithelial-mesenchymal transition. Hepatocellular carcinoma progression and metastasis have been reported to be highly influenced by diverse microenvironmental elements. The main objective of this thesis is to create an in vitro model of liver cancer microenvironment that better recapitulate in vivo settings. The proposed model is based on three-dimensional co-culture system of liver cancer cells and non-malignant fibroblasts. The model presented herein exhibited a transcriptome profile associated with an aggressive phenotype that better mimics in vivo hepatocellular carcinoma, and therefore, a more reliable platform for anti-cancer drug screening.

Keywords: Tumor microenvironment, liver cancer, 3D culture, transcriptome, drug resistance.