

**Abstracts (Oral Presentation)**

## Human Placenta-derived Mesenchymal Stem Cells Inhibit Proliferation and Promote Apoptosis in Cholangiocarcinoma Cell Lines via Suppressing JAK2/STAT3 Signaling

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### Abstract

**Introduction:** Cholangiocarcinoma (CCA) is an aggressive malignancy originating from the bile duct. Incidence and mortality increase worldwide because of late diagnosis and a lack of therapeutic options. Mesenchymal stem cells (MSC) can secrete several cytokines to promote or inhibit the progression of many cancer cell types. However, the effect of human placenta-derived MSCs (PL-MSC) on CCA progression has not been clarified.

**Objectives:** The present study aims to investigate the effects and molecular mechanisms of conditioned media derived from PL-MSC (PL-CM) on three CCA cell lines (KKU100, KKU213A, and KKU213B).

**Methods:** CCA cells were cultured with PL-CM to examine cell proliferation and apoptosis by MTT assay and annexin V/PI analysis, respectively. JC-1 staining, caspase 3 activity, and western blot were used to investigate the mechanism of PL-CM induced apoptosis of CCA cell lines through mitochondrial apoptotic pathway and JAK2/STAT3 signaling.

**Results:** PL-CM could suppress proliferation and promote apoptosis of all CCA cell lines by inducing mitochondrial apoptotic pathways, most likely through suppression of the JAK2/STAT3 signaling pathway.

**Conclusions:** This study suggests PL-CM has a potent anti-cancer effect on CCA cells. Therefore, PL-MSC may provide a basis for further clinical trials to study as well as a possible alternative treatment for CCA patients.

**Keywords:** Apoptosis, Cholangiocarcinoma, Conditioned media, Mesenchymal stem cells, Placenta

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