EVALUATION THE EXPRESSION OF MAP1LC3A AUTOPHAGY GENE AND ITS RELATED LNCRNAS AND MIRNA IN 5-FU CHEMORESISTANT COLORECTAL CANCER CELL LINES

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UEG Week Copenhagen 2023 | Poster

Colorectal

October 15, 2023

A bioinformatics and cell line study identified MAP1LC3A and five non-coding RNAs (FAM225A, NCK1-DT, LINC01825, LINC02188, and miR-335-5p) as candidates associated with autophagy-mediated 5-FU chemoresistance in colorectal cancer.

KEY POINTS

- MAP1LC3A was confirmed as a key gene in the autophagy pathway through KEGG analysis and showed differential expression between 5-FU chemosensitive and chemoresistant CRC cell lines.
- Five non-coding RNAs (FAM225A, NCK1-DT, LINC01825, LINC02188, and miR-335-5p) were nominated through bioinformatic analysis as most relevant to MAP1LC3A and showed differential expression in chemoresistant versus chemosensitive cell lines.
- The study developed 5-FU chemoresistance in Caco2 and SW480 cell lines and confirmed autophagy and resistance using MTT assay, western blot, and qRT-PCR.
- The authors propose these ncRNAs as potential biomarkers for 5-FU chemoresistance in CRC patients and suggest they could be targeted with siRNAs to enhance chemotherapy.
- This material is most relevant to researchers investigating mechanisms of chemoresistance in colorectal cancer and those seeking biomarkers for treatment stratification.

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