gutflix
GI learning, personalised

Summary

LONG-TERM CULTURING OF HEALTHY- AND ULCERATIVE COLITIS-PATIENT DERIVED COLON ORGANOIDS IS ASSOCIATED WITH DECREASED METHYLATION LEVEL OF LINE-1

Ugne Kulokiene

UEG Week Copenhagen 2023 Poster

IBD

October 15, 2023

Long-term culture of human colon organoids from ulcerative colitis patients and healthy controls results in decreased LINE-1 methylation at rates that differ by inflammation status of the source tissue.

KEY POINTS

- LINE-1 methylation was highly methylated across all groups, with average levels of 66.4% in healthy controls, 66.6% in quiescent UC, and 64.5% in active UC when all biological samples were pooled.
- Methylation levels decreased significantly during organoid culture compared to original biopsies, with late-passage healthy control organoids showing the largest decrease (8.1% lower than biopsy, 6.3% lower than passage 0).
- Active UC passage 1 organoids had lower LINE-1 methylation than either healthy controls or quiescent UC organoids (by 4.7% and 3.7%, respectively), indicating disease-specific epigenetic differences.
- The study analyzed 95 DNA samples from 19 subjects (6 controls, 6 active UC, 7 quiescent UC) using pyrosequencing to quantify LINE-1 CpG island methylation across biopsies, crypts, and multiple organoid passages.
- This work addresses a knowledge gap regarding DNA methylation stability in adult intestinal stem cell-derived organoids, particularly relevant for researchers using organoid models to study ulcerative colitis.

VIEW THIS CONTENT ON GUTFLIX

https://gutflix.eu/search/d/ca1ff724-743b-11ee-b0fc-0242ac140004

AI-generated summary

This summary was generated by an AI large language model based on the content transcript. It is for informational purposes only and should not be considered a substitute for clinical judgment. Always rely on your professional expertise and the full clinical context when making clinical decisions.