EXPLORING THE MOLECULAR TARGETS AND MECHANISM OF TARAXASTEROL IN THE TREATMENT OF ULCERATIVE COLITIS BASED ON NETWORK PHARMACOLOGY AND EXPERIMENTAL VALIDATION

Youxiang Chen

UEG Week Vienna 2024 Poster

IBD

October 13, 2024

Network pharmacology analysis and experimental validation identify taraxasterol, a dandelion compound, as a potential therapeutic agent for ulcerative colitis through PI3K-Akt pathway inhibition.

KEY POINTS

- A total of 129 targets of taraxasterol against ulcerative colitis were identified using multiple databases, with the top 10 hub targets including GRB2, PTPN11, SRC, PIK3R1, LCK, EGFR, MAPK1, IGF1, ESR1 and JAK2.
- KEGG enrichment analysis identified the PI3K-Akt pathway as significantly associated with taraxasterol treatment of ulcerative colitis.
- In vitro experiments showed taraxasterol reversed expression of EGFR, GRB2, PIK3R1 and JAK2 genes, upregulated IL-10 mRNA expression, and decreased IL-6, IL-1β and TNF-α mRNA levels in LPS-induced intestinal epithelial cells.
- In vivo assays demonstrated taraxasterol alleviated DSS-induced colonic inflammation in mice, including reversal of weight loss and colon length shortening, reduction of DAI score, and improvement of intestinal barrier disruption.
- Both in vivo and in vitro experiments confirmed that taraxasterol inhibits activation of the PI3K/Akt pathway, with EGFR, GRB2, PIK3R1 and JAK2 identified as the most relevant potential therapeutic targets.

VIEW THIS CONTENT ON GUTFLIX

https://gutflix.eu/search/d/76379762-9112-11ef-8c77-0242ac140004

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.