

# ESTROGEN INCREASES THE EXPRESSION OF BK<sub>(CA)</sub> AND IMPAIRS THE CONTRACTION OF COLON SMOOTH MUSCLE VIA UPREGULATION OF SPHINGOSINE KINASE 1

yan Wang

UEG Week Copenhagen 2023

Poster

Colorectal

October 15, 2023

**Estrogen impairs colonic smooth muscle contraction through upregulation of sphingosine kinase 1 and large conductance calcium-activated potassium channels in rat and mouse models.**

## KEY POINTS

- Estrogen treatment significantly upregulated expression of large conductance calcium-activated potassium channels, sphingosine kinase 1, and sphingosine-1-phosphate receptors 1 and 2 in colonic smooth muscle and smooth muscle cells.
- Estrogen-treated rats exhibited weak colonic smooth muscle contraction and delayed colonic transit compared to controls.
- Wild-type mice treated with estrogen showed impaired gastrointestinal motility and enhanced expression of calcium-activated potassium channels and sphingosine-1-phosphate receptors, while these effects were partially reversed in sphingosine kinase 1 knock-out mice.
- Inhibition of calcium-activated potassium channels, sphingosine kinase 1, and sphingosine-1-phosphate receptors 1 and 2 attenuated the effect of estrogen on calcium mobilization in rat colonic smooth muscle cells.
- The authors suggest these findings may provide insights into therapeutic targets for patients with constipation.

VIEW THIS CONTENT ON GUTFLIX

<https://gutflif.eu/search/d/5e0d947e-743b-11ee-8815-0242ac140004>



**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.