フェローシップ及びSPRING支援学生・指導教員の交流会

EEPD1 enhances malignant phenotypes and mediates 5-FU resistance by regulating ABCA1 expression in colorectal cancer

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Gastrointestinal and Pediatric Surgery,
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Background

- ✓ Exonuclease/Endonuclease/Phosphatase Domain-1 (EEPD1) is a structure-specific nuclease that mediates DNA repair function and is a potential target for cancer therapy. EEPD1promotes cellular cholesterol efflux by controlling cellular levels and activity of ATP-binding cassette transporter A1 (ABCA1).

- ✓ ABCA1 is an oncogene in colorectal cancer (CRC) and is also associated with acquired tumor chemoresistance.

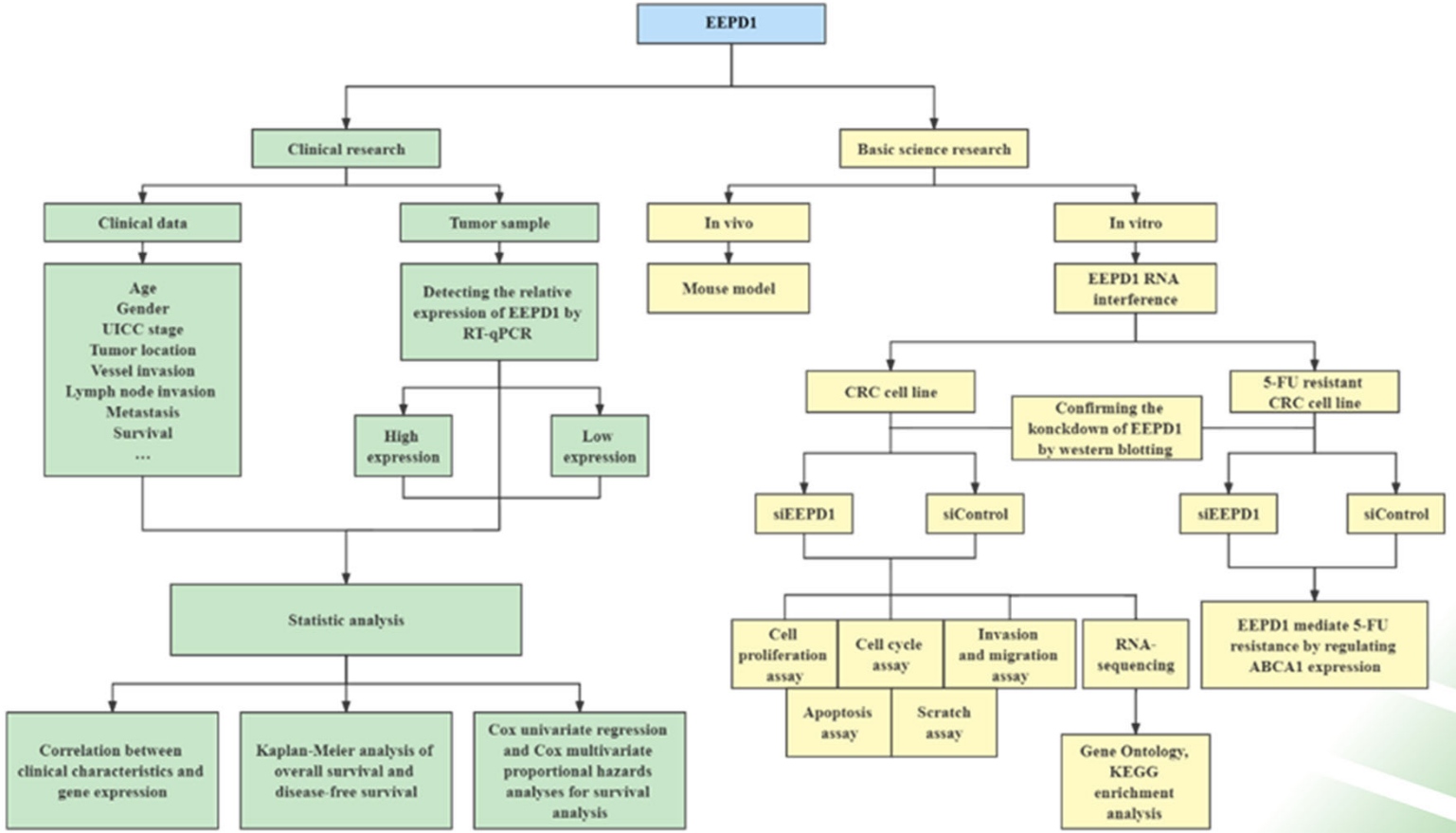
- ✓ However, no studies have been performed the function of EEPD1 and the regulatory relationship between EEPD1 and ABCA1 in CRC have not been evaluated.

- ✓ Furthermore, the functions and mechanisms of chemotherapeutic efficacy and drug resistance of EEPD1 in CRC have not been fully delineated..

Purpose

- ✓ To evaluate the expression and clinical prognostic significance of EEPD1 in CRC.
- ✓ To elucidate the role of EEPD1 in the regulation of CRC progression.
- ✓ To identify the role of the regulatory relationship between EEPD1 and ABCA1 in CRC 5-FU resistance.

Experimental works



Summary of current research

- ✓ The study is conducted in patients with CRC who underwent curative resection at Mie University Hospital from 2011 to 2015. We quantified the relative expression levels of EEPD1 in CRC tissues and tumor-adjacent normal tissues by qPCR, and then analyzed the associations between clinical features, prognosis and EEPD1 expression.

- ✓ The present study has up to now investigated a series of in vitro experiments (cell proliferation, colony formation and apoptosis assays) to elucidate the anti-tumor potential and mechanism of EEPD1 on CRC cells.

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Introduction

- ✓ Our department conducts clinical and basic research to identify problems through detailed analysis of clinical results and to develop or improve diagnostic, therapeutic, and preventive methods necessary to improve treatment outcomes. By carrying out this clinical research and bridging research, we hope to establish biomarkers and new treatment methods that can change new treatment strategies, fulfill the mission of a university hospital as an academic institution, and contribute to medicine by disseminating evidence originating from Mie University to the world.

Introduction

- ✓ MA RUIYA（マ リヤ）
- ✓ Inner Mongolia, China
- ✓ Mie University
- ✓ Clinical Medical Sciences
- ✓ Gastrointestinal and Pediatric Surgery

- ✓ 2012.09-2017.07 Inner Mongolia University of Science & Technology Baotou Medical College B.Med
- ✓ 2018.09-2021.06 North China University of Science and Technology M.D.
- ✓ 2022.10 Admission Mie University Graduate School of Medicine PhD program

Introduction

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Antitumor effects of Andrographis via ferroptosis-associated genes in gastric cancer

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Introduction

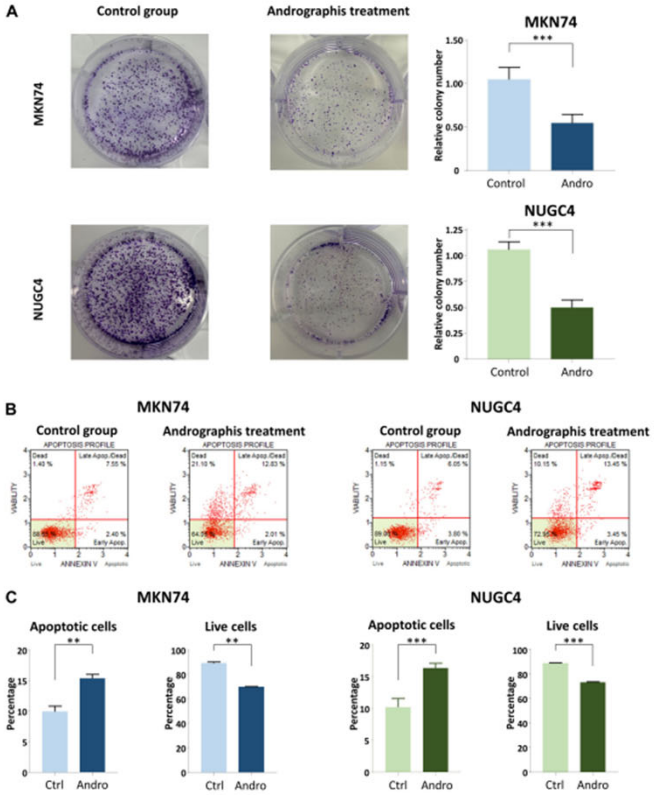
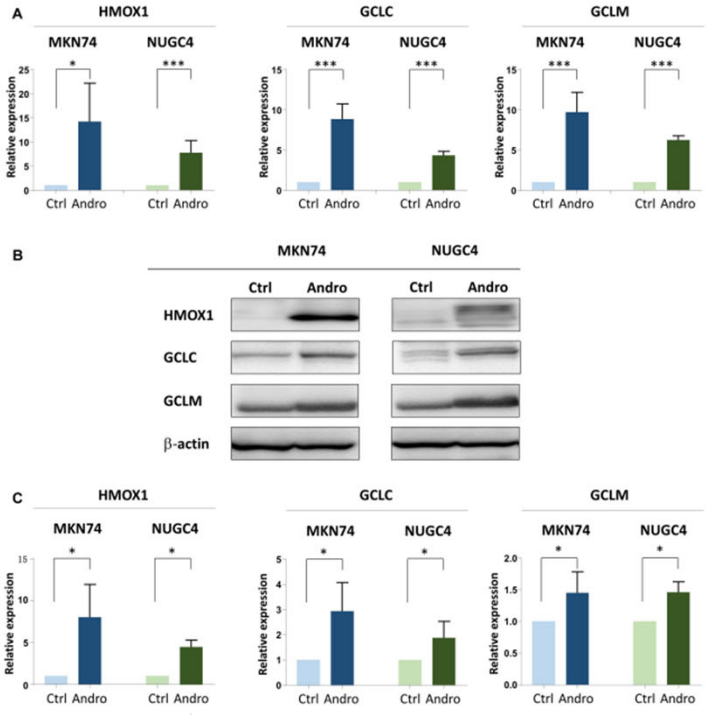


Figure 2. Inhibition of colony formation and enhancement of apoptotic activity induced by Andrographis in gastric cancer cells. (A) Colony formation assay to assess clonogenicity in MKN74 and NUGC4 cells following treatment with Andrographis. (B) Representative images illustrating the percentage of MKN74 and NUGC4 cells undergoing apoptosis, as indicated by positive staining for Annexin V. (C) Bar graphs showing the percentage of live and apoptotic cells in each treatment group in the apoptosis assay. **P<0.01 and ***P<0.001 (two-tailed Student's t-test). Andro, Andrographis treatment group; Ctrl, Control group; Apop, apoptosis.



gure 3. Altered mRNA and protein expression levels of the ferroptosis-associated targets *HMOX1*, *GCLC* and *GCLM* after Andrographis treatment in gastric ncer cells. (A) Changes in *HMOX1*, *GCLC* and *GCLM* mRNA expression after Andrographis treatment in MKN74 and NUGC4 cells. (B) Representative nage of immunoblotting assays for each group in MKN74 and NUGC4 cells. (C) Changes in HMOX-1, GCLC and GCLM protein expression after ndrographis treatment in MKN74 and NUGC4 cells. *P<0.05 and ***P<0.001 (two-tailed Student's t-test). GCLC, glutamate-cysteine ligase catalytic; GCLM, utamate-cysteine ligase modifier; HMOX1, heme oxygenase-1; Andro, Andrographis treatment group; Ctrl, Control group.

Thank you very much!