Berberine, alone and in conjunction with immuno-modulators, down-regulates pro-inflammatory CD4+T-cells: Implications for a combined treatment of inflammatory bowel diseases

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Where are we going?

1. “Assessing the toolbox”
   • Screening for potential therapeutic agents

2. “Find the role”
   • Establish a well-defined approach

3. “Put to the test”
   • Well-designed, randomized, controlled trials
Berberine

• Berberine is an isoquinoline alkaloid derived from Coptis Chinensis and Goldenseal

• Traditional use:
  – Infectious diarrhea
  – Dysentery

• Modern evidence:
  – Ameliorate DSS-induced murine colitis
  – Recovery of epithelial barrier function

Yan F, Am J Physiology Gastrointestinal. 2013
Berberine abrogates proliferation of CD4+ T-cells

- Medium
- T3
- T3 + Ber25uM
- T3 + Ber50uM
Berberine dose-dependently Inhibits TNF-alpha secretion
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Berberine + 6MP combination
Additive inhibitory effect on proliferation of CD4+ T-cells
Berberine + Ifx combination
Additive inhibitory effect on TNF-alpha secretion
**Infliximab**

Proliferation –/+  
Cytokine +

**6-MP**

Proliferation +  
Cytokine –

**Berberine**

Proliferation +  
Cytokine +
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