國立屏東科技大學生物科技系
Department of Biological Science and Technology
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# 膽紅素對在葡聚醣硫酸鈉（DSS）小鼠結腸炎模型的影響

# The Effects of Bilirubin in the Dextran Sulfate Sodium (DSS) Mouse Colitis Model

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# 摘要

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## 摘要內容:

BALB/c 小鼠分為正常組、模型對照組(500 kDa 的和 40 kDa 的 DSS)和三個不同濃度的膽紅素處理組。口服給藥膽紅素(10，50，100 毫克/公斤體重)一周後，動物給予 3%DSS(40 kDa)的飲用水，除了正常組外，進一步 8 個連續天給藥膽紅素有或沒有膽紅素治療。 40 kDa 的 DSS 造成小鼠嚴重的瀰漫性結腸炎，而 500 kDa 的 DSS 處理的小鼠沒有病變。膽紅素可防止體重減輕和 DSS 誘導的結腸炎增加的疾病活動指數(DAI)。三種不同濃度的膽紅素中，10mg / kg 的膽紅素組可取得最好治療的結果。膽紅素抑制 DSS-引導的粘膜水腫、粘膜下糜爛和結腸及多種組織的損害。本研究發現，膽紅素給藥可改善臨床症狀，並降低小鼠模型中潰瘍性結腸炎(UC)的損害。

**關鍵詞：**膽紅素（BR）;葡聚醣硫酸鈉（DSS）;結腸炎;炎性腸病。

# Abstract


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**The content of abstract in this thesis:**


BALB/c mice were divided into normal group, colitis control group (500 kDa and 40 kDa DSS), and three different concentrations of bilirubin-treated groups. Bilirubin (10 or 50 or 100 mg/kg body weight) was administered orally. After one week, animals were given 3% DSS (40 kDa) in drinking water, except those of the normal group, and for a further 8 consecutive days with or without bilirubin treatment. Mice treated with 40 kDa DSS developed most severe diffuse colitis, while mice treated with DSS of 500 kDa had no lesions. Bilirubin prevents body weight loss and an increase in disease activity index (DAI) scores in mice with DSS-induced colitis. Among three different concentrations of bilirubin, 10 mg/kg bilirubin group was achieved the best result. Bilirubin treatment inhibited DSS-inducted mucosal edema, submucosal erosions and colon damage in various tissues. Bilirubin administration improves clinical signs and reduces the damage of colonic inflammation in a murine model of ulcerative colitis (UC).

**Keywords:** Bilirubin (BR); dextran sodium sulfate (DSS); Colitis; Inflammatory bowel disease.

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