



Effects of hydrocyactylolide and dihydroflavone B₃ on fluid propulsive behavior of colonic segments from rat and guinea-pig

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Abstract

AIM: To observe the effects of Hydrocyactylolide, Codonopsis Pilosulae (French) Nannf Part 7-2, ethanol extract of Radix et Rhizoma, ether extract of Semen Arecal and Dihydroflavone B₃ (extract of a composite plant) on fluid propulsive behavior of colon segments from rat and guinea pig.

METHODS: The rat ulcerative colitis models were induced by alleviating of 2,4-Dinitrochlorobenzene (DNCB). Isolated colon segments with intact blood vessel and enteric nerves were prepared. The fluid propulsive behavior of these colonic segments were measured using "System for Detect analyzing fluid Propulsion of Isolated Intestinal Segment". The available herb and their effects

were observed.

RESULTS: (1) In health guinea-pig, after arterial perfusion of 2.5% ethanol extract of Radix et Rhizoma, the frequency of propulsive complex of colon (PCC) and the fluid output pressure (FOP) decreased. (2) In healthy rats, arterial perfusion of Codonopsis Pilosulae (French) Nannf Part 7-2 (equal to crude drug 12 g/L) tended to decrease the frequency of PCC and aboral FOP of colon; Arterial perfusion of 3% ether extract of Semen Arecal caused strongly contraction, quickly increased the basal lumen pressure and re initiated fluid propulsion of colonic segments from rat fluid propulsion was primarily blocked by adrenaline (10^{-5} mol/L). If tetrodotoxin (10^{-5} mol/L) was added to adrenaline (10^{-5} mol/L) as the arterial perfusion solution, 3% ether extract of Semen Arecal still caused contraction and increased the basal lumen pressure of the colon, but not re initiated the fluid propulsion; The fluid propulsive behavior was significantly abnormal in isolated colon segments from ulcerative colitis model rats; Arterial perfusion of Hystroyatractylolide (2×10^{-5} mol/L) decreased PCC frequency of ulcerative colitis model rat; While dihydroflavonol B₃ (2×10^{-5} mol/L) tended to increase PCC frequency, increase the oral FOP and aboral FOP.

CONCLUSION: These herbs modulate the abnormal colonic motility from different directions. They had prospects for development.

Key words: Propulsive complex of colon; Fluid output pressure; Herb

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