World Journal of Gastroenterology

Submit a Manuscript: http://www.wjgnet.com/esps/
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
DOI: 10.3748/wjg.v6.iSuppl3.12

World J Gastroenterol 2000 September 15; 6(Suppl 3): 12
ISSN 1007-9327 (print) ISSN 2219-2840 (online)

Autoimmunity in ulcerative colitis: Humoral and cellular immune response by tropomyosin in ulcerative colitis

Xin Geng, Masato Taniguchi, Hui-Hui Dai, JJ-C Lin, Jim Lin, Kiron Moy Das

Xin Geng, Masato Taniguchi, Kiron Moy Das, Division of Gastroenterology and Hepatology, Department of Medicine, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, New Brunswick, NJ, United States

Hui-Hui Dai, JJ-C Lin, Jim Lin, Department of Biological Sciences, University of Iowa, Iowa, IA, United States

Author contributions: All authors contributed equally to the work.

Correspondence to: Dr. Xin Geng, Division of Gastroenterology and Hepatology, Department of Medicine, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, New Brunswick, NJ, United States. xgengl@excite.com
Telephone: +1-732-2358650
Fax: +1-732-2358651

Received: May 12, 2000
Revised: June 28, 2000
Accepted: July 10, 2000
Published online: September 15, 2000

Abstract

AIM: Autoimmunity has been emphasized in the pathogenesis of ulcerative colitis (UC). We reported that tropomyosin (TM) or TM related protein is a putative autoantigen in UC. In human fibroblast, at least 8 isoforms of TM have been identified with molecular weight range from 30 kD to 40 kD, depending upon the isoforms, and human TM isoforms (hTM5) has been found the main isoform in human intestinal epithelial cells. In this study, hTM5 was used as a putative auto-antigen for the humoral and T cell immune responses in patients with UC, Crohn's disease (CD) and healthy subjects (HS) as controls.

METHODS: Anti hTM antibody was examined by enzyme linked immunosorbent assay using human sera (UC 59, CD 28, HS 26) against hTM isoforms. The IFN-γ production by peripheral blood T cells following stimulation by recombinant hTM5 was analyzed by ELISPOT assay.

RESULTS: Anti hTM5 antibody (IgG1) was detected in 15/59 (25.4%) patients with UC, 3/28 (10.7%) with CD, and 3/26 (11.5%) of HS. The OD value in UC was significantly higher than in CD and HS groups ($P < 0.05$; $P < 0.01$ respectively). Western blot analysis demonstrated immunoreactivity against hTM5 in several UC sera. ELISPOT assay demonstrated that IFN-γ production is significantly higher in UC (7/18, 39.0%), compared with CD (0/8, 0%) and HS (0/7, 0%), ($P < 0.05$).

CONCLUSION: A significantly higher immune response to hTM5 was present in UC compared to CD and HS. Further studies of the hTM5/peptides may provide immuno-biochemical mechanism of autoimmune process in UC.

Key words: Colitis, ulcerative; Autoimmunity; Immunity, cellular; Tropomyosin; Cellular immune response; Enzyme-linked immunosorbent assay

Geng X, Taniguchi M, Dai HH, Lin JJC, Lin J, Das KM. Autoimmunity in ulcerative colitis: Humoral and cellular immune response by tropomyosin in ulcerative colitis. *World J Gastroenterology* 2000; 6(Suppl 3): 12 Available from: URL: http://www.wjgnet.com/1007-9327/full/v3/iSuppl3/12.htm DOI: http://dx.doi.org/10.3748/wjg.v3.iSuppl3.12

E- Editor: Hu S

Published by **Baishideng Publishing Group Inc**
8226 Regency Drive, Pleasanton, CA 94588, USA
Telephone: +1-925-223-8242
Fax: +1-925-223-8243
E-mail: bpgoffice@wjgnet.com
Help Desk: http://www.wjgnet.com/esps/helpdesk.aspx
http://www.wjgnet.com