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In this study, twenty seven adult patients with celiac disease were enrolled. Six biopsies of celiac disease and 3 control samples with no celiac disease were conducted. Single cell suspensions were prepared from biopsies and treated with dithiothreitol to remove epithelial cells and subsequently cell cultures were established.

Intra epithelial leukocytes (IELs) were expanded *in vitro* by culture with recombinant human IL-2 (rhIL-2) and IL-15 for 2 weeks. Intracellular cytokine detection by flow cytometry were performed on IELs stimulated with Gliadin treated with transglutaminase

or lipopolysaccharide or Keyhole limpet hemocyanin or fractions of wheat (IARI, Delhi) for different time points probed with anti-CD4 FITC conjugated mAbs (BD, New Jersy, USA) against surface antigen. The cells were acquired using FACS Verse flow cytometer and analyzed using a FlowJo software (Treestar, Ashland, OR). Different wheat genotypes were exposed to the patient's T-cell line to provide an apparent result of level of cytokines.