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“Extracellular Domain Isoforms of CEACAM1 are Expressed in Specialized Microdomains of EBV-Transformed B Cell Lines”

A small number of publications have documented expression of CEACAM1 in lymphoma and EBV-transformed B cell lines, as well as moderate levels of expression in resting peripheral B lymphocytes. Our results suggest the upregulation of CEACAM1 with EBV-infection or transformation. While there are a number of reasons to believe CEACAM1 has important signaling function in B cells, the activity of CEACAM1 in this cellular context remains unclear. In humans, CEACAM1 is expressed in a number of isoforms. In the human B cell lines studied, we are able to detect expression of several of these isoforms by RTPCR and by western blot. Western blot analysis shows two distinct lower molecular weight bands that differ between the NP40 lysis soluble and particulate fractions. We believe these bands correspond to the CEACAM1-1 domain isoform. The 1-domain isoform is called this because it has one extracellular domain, the N-domain. The role of this isoform, like the others, in this context is unclear. Understanding the role of CEACAM1, particularly the functions of the individual splice variants, in B cells may shed light on the cellular responses to EBV infection, on lymphomagenesis, and on lymphocyte activation.