Molecular mechanisms of class switch recombination in aCD38-activated B cells.

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Class switch recombination(CSR) is known as a crucial step in adaptive immunity. We show here, αCD38 and IL-5-stimulated B cells can undergo μ to γ1 CSR and produce IgG1, while αCD38 and IL-4-stimulated B cells cannot. We found that the addition of 8-mercaptoguanosine(8-SGuo) with IL-4 to the culture of CD38-activated B cells can induce μ to γ1 CSR and IgG1 production. 8-SGuo is a guanosine analog, and when added to the culture of CD38-activated B cells, it can induce proliferation, AID exression, and DNA double strand break through a MyD88-dependent pathway. As loxoribine(7-allyl-8-oxoguanosine) is a ligand for TLR7, 8-SGuo might be a ligand for some TLR(s). However, αCD38 and 8-SGuo cannot induce CSR without IL-4. This *in vitro* system suggests that some molecules other than AID are required for CSR.