sialylated ligands but not those masked by 9-O-acetylation, so the authors investigated whether pregnancy-induced deacetylation of IgG stimulates CD22-dependent inhibition of B cells. CD22 was shown to be essential for the protective efficacy of plgG in neonatal mice, but plgG efficiently protected B cell-deficient neonates from Lm infection. Together, the results suggest that a subset of neonatal B cells suppresses IgG-mediated protection against Lm but that pregnancy-induced modification of Lm-specific antibodies enables CD22 binding and inhibition of the suppressive B cell subset. B cells producing the immunosuppressive cytokine IL-10 have been previously shown to promote Lm susceptibility, and in this study, plgG but not vlgG was shown to inhibit IL-10 production by these cells in a CD22-dependent manner. As plgG selectively inhibited Lm-activated B cells, the authors propose that IgG may bridge activating and inhibitory receptors on B cells by simultaneously binding Lm and CD22.

In summary, SIAE-mediated deacetylation of antibodies during pregnancy allows for maternally transferred IgG to inhibit a regulatory B cell population in neonates, which in turn presumably prevents the IL-10-mediated suppression of innate immune responses to Lm.

Kirsty Minton

The authors hypothesize that germline transcription at the V(D) locus is a consequence of accessible chromatin, and that the resulting ncRNAs are normally resolved by the RNA exosome. If the RNA exosome is defective, the accumulation of chromatin-associated ncRNA or RNA:DNA hybrid-associated non-B DNA structures may interfere with loop extrusion kinetics during V(D)J recombination and DNA binding of the RAG recombinases. This obstructs the first step of D to JH recombination and leads to p53-mediated apoptosis of pro-B cells. Together, these studies demonstrate that the RNA exosome is an essential component in the process of V(D)J recombination.

Alexandra Flemming

that these are not only upregulated in germinal centre B cells, where the RNA exosome is known to be involved in class switch recombination and somatic hypermutation, but also during B cell development in the bone marrow and fetal liver. As observed with Skiv2l, conditional deletion of Exosc10, Dis3 or Exosc3 in early mouse B cells also led to a developmental block at the pro/pre-B cell stage and to defective V(D)J rearrangement. A knock-in of VDJ genes at the IgH locus partly rescued the pre-B cell population in Dis3-deficient mice, but these cells then showed defective V to J recombinaton at the light chain locus (the light chain locus was less affected). Transcriptional analysis revealed an accumulation of noncoding RNAs (ncRNAs) in the absence of Dis3, including a marked increase in antisense germline transcription that overlapped the J, D genes, and an accumulation of ncRNAs on V genes and recombination signal sequences. Moreover, gene-set enrichment analysis showed increased expression of p53 pathway-associated genes in Dis3-deficient pro-B cells.

Original Article

Virus infection also resulted in neuroinflammation but without the prolonged effects on subcortical white matter.