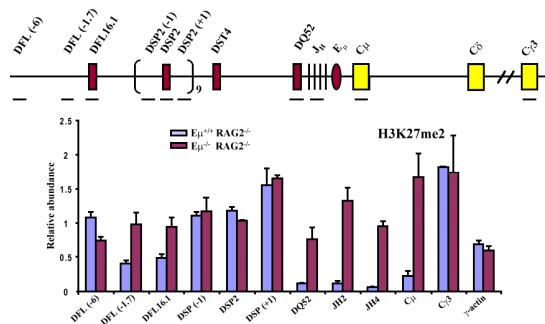
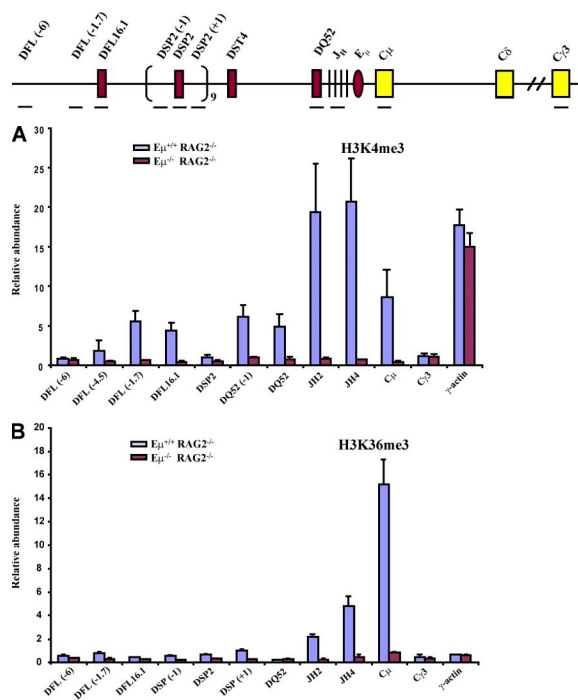


**Figure S1.** Histone acetylation analysis of the DH-C $\mu$  region in  $E\mu^{+}$  and  $E\mu^{-}$  RAG2-Abelson virus-transformed cell lines. Anti-H3K9ac and anti-H4ac antibodies were used in ChIP assays from cell lines of the indicated genotypes. Coimmunoprecipitated DNA was amplified using primers shown in the schematic and the relative abundance of signal compared with input DNA as described in Materials and Methods. Results shown are from three independent chromatin preparations with each amplicon assayed in duplicate. Error bars represent the standard deviation between experiments.



**Figure S2.** Dimethylation of lysine 27 of histone H3 in the DH-C $\mu$  region in  $E\mu^+$  and  $E\mu^-$  RAG2-deficient Abelson virus-transformed cell lines. ChIP assays using anti-H3K7me2 antibody and cell lines of the indicated genotypes. Coimmunoprecipitated DNA was amplified using primers shown in the schematic and the relative abundance of signal compared with input DNA as described in Materials and methods. Results shown are from three independent chromatin preparations with each amplicon assayed in duplicate. Error bars represent the standard deviation between experiments.



**Figure S3.** Transcription-associated histone H3 modifications in  $E\mu^+$  and  $E\mu^-$  RAG2-deficient Abelson virus-transformed cell lines. Anti-H3K36me3 and anti-H3K4me3 antibodies were used in ChIP assays from cell lines of the indicated genotypes. H3K36me3 is associated with the genomic DNA corresponding to the 3' regions of RNA polymerase II transcripts and H3K4me3 is associated with genomic DNA corresponding to 5' regions of RNA polymerase II transcripts. The  $\gamma$ -actin primer set used here is located in the promoter region and therefore shows enrichment only in H3K4me3 immunoprecipitates. Immunoprecipitated DNA was amplified using primers shown in the schematic and the relative abundance of signal compared with input DNA as described in Materials and methods. Results shown are from three independent chromatin preparations with each amplicon assayed in duplicates. Error bars represent the standard deviation between experiments.

**Table S1.** Materials used in ChIP

Material	Source
Nonspecific IgG	Upstate Biochemicals
Anti-H3K9ac antibody	Upstate Biochemicals
Anti-H3K9me2 antibody	Upstate Biochemicals
Anti-H4ac antibody	Upstate Biochemicals
Anti-H3K27me2 antibody	Upstate Biochemicals
Anti-RNA Pol II antibody	Upstate Biochemicals
Salmon sperm DNA/protein A agarose beads	Upstate Biochemicals
Protein G beads	Upstate Biochemicals
Anti-H3K36me3 antibody	Abcam
Anti-H3K4me2 antibody	Abcam
Anti-H3K4me3 antibody	Abcam
PicoGreen	Invitrogen

PicoGreen was used for quantifying ChIP DNA.

**Table S2.** Primers used for transcription, DNase I sensitivity and DJ rearrangement assays.

Primer	Sequence
<b>V<sub>H</sub></b>	
5' J558FP	GGCTACAGCTTCACAAGCTACTATATACA
5' J558RP	AAATCCATCCAATCCACTCAAGTC
3609FP	CACACATTACTGGGATGATGACA
3609RP	GGAGGTATCCTGGAGATTGTGA
CH10FP	TGACCCCTTGATAGTGAACTCACT
CH10RP	TGTGCTGGAGGATTTGTCTACAG
V119.13 FP	GGAAATAGTGATACTAGCTACAACCGAAG
V119.13 RP	CAGTGTGGCGGATGTGA
VGK2 FP	GGAGTGCCAAAATATGCAGAAGA
VGK2 RP	GCTGGCAGAGGTTCCAAAAG
VOX1 FP	AATATGGGCTGGTGGAAAGCA
VOX1 RP	TTGGCTCTGGAGTTGTCTTTG
7183.1b FP	GGTCGCAGCCATTAATAGTGATG
7183.1b RP	GTACAGGGTCTCTTGGTATTGTCTCT
<b>DNase I assay</b>	
DFL16.1 FP	CAAAGCAGCCACCATCCAG
DFL16.1 RP	GCAGCACGGTTGAGTTTCAG
DSP2 FP	TGTTACCTTACTTGGCAGGGATT
DSP2 RP	TGGGTTTTTGTGCTGGATATATC
DQ52 FP	CCCTGTGGTCTCTGACTGGTG
DQ52 RP	GATTTCTAAGCCTCTCTACTTCTCT
JH2 FP	TACTTTGACTACTGGGGC
JH2 RP	CCCTAGTCTTCATGACC
E $\mu$ -5' FP	CTGACATTACTTAAAGTTTAAACCGAGG
E $\mu$ -5' RP	CTCCAACCTCAACATTGCTCAATC
E $\mu$ -3' FP	ATTCAGCCGAAACTGGAGAGGTC
E $\mu$ -3' RP	GGGGAAACTAGAACTACTCAAGC
C $\mu$ FP	ATGTCTTCCCCTCGTCTCC
C $\mu$ RP	TACTTGCCCCCTGTCCTCAG
C $\gamma$ 3 FP	TGGACAAACAGAAGTAGACATGGGTC
C $\gamma$ 3 RP	GGGGTTTAGAGGAGAGAAGGCAC
$\beta$ 2m FP	AGGCTGAACGACCAGATACAC
$\beta$ 2m RP	AGGTTACAAAGGGACTTTCCC
$\beta$ -globin FP	GCCTTGCCTGTTCTGCTC
$\beta$ -globin RP	CAGACCATAAACTGTATTTTCTTATT
<b>DJ rearrangement assay</b>	
DFL16.1 FP	ACACCTGCAAAAACAGAGACCATA
DSP2 FP	ATGGCCCCTGACTCTGCACTGCTA
JH3 RP	CTTCATCATACTTCAGTTCTAATGTCAAC
JH3 probe	GCAGAGACAGTGACCAGAGTC
$\beta$ -globin FP	GCCTTGCCTGTTCTGCTC
$\beta$ -globin RP	CAGACCATAAACTGTATTTTCTTATT
$\beta$ -globin probe	GTGCATCTTGACTAGTTCCACACC
Rag2 FP	GACGTTTACATATGCCTTCTACCCAG
Rag2 RP	TTCCAGCTGATAACCCACCAATAAC
Rag2 probe	GAACCTCAGGATGGGCTGTCTTTTC