IgM H- and L-chains artificially and excessively accumulated in HDAC2(-/-) DT40 mutants are gradually and dramatically reduced in distinct manners in individual mutant clones via a lot of generations during continuous cultivation

Figure 11

Accumulation of IgM H- and L-chains in HDAC2(-/-) DT40 mutant cells

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Recognition of the accumulation as uncomfortable environment change and genome-wide signal transduction about it to chromatin structure

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Alterations in chromatin structure of a set of various chromatin modifying enzyme and transcription factor genes (PCAF, HDAC7, HDAC9, Pax5, Aiolos, Ikaros, EBF1, E2A, PU.1, OBF1, Blimp1, XBP-1, Oct2, etc.) in individual clones, resulting in their altered transcription levels

↓

Successive convergence of the response for the environment change to chromatin structure of a set of particular enzyme and factor genes (Pax5, Aiolos, EBF1, OBF1, PCAF, HDAC7, HDAC9, etc.) in individual clones during cultivation

↓

Diverse alterations in chromatin structure of the above-mentioned particular enzyme and factor genes (Pax5, Aiolos, EBF1, OBF1, PCAF, HDAC7, HDAC9, etc.) in individual clones during cultivation, resulting in their varied transcription levels

↓

Gain of new and same cell function to reduce accumulated IgM H- and L-chains based on their decreased gene expressions in different manners through altered gene expressions of particular transcription factors (Pax5, Aiolos, EBF1, OBF1, etc.) in individual mutant clones during cultivation

clone cl.2-1: OBF1-dependent and distinct from DT40
clones cl.2-2, cl.2-3, cl.2-4, cl.2-5: Pax5- and Aiolos-dependent, major type and slightly similar to DT40
clone cl.2-6: Pax5-, Aiolos- and EBF1-dependent and most similar to DT40