Leukaemia Section
Short Communication

**t(3;6)(q27;p22) HIST1H4I/BCL6**

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**Clinics and pathology**

**Disease**
Non Hodgkin lymphoma

**Clinics**
Apparently 6 cases have been described: a case of follicular mixed small cleaved and large cell lymphoma, a case of follicular large cell lymphoma, and 3 cases of diffuse large B-cell lymphoma (Akasaka et al., 1997; Akasaka et al., 2000; Kurata et al., 2002; Ohno, 2006); and a case of primary central nervous system lymphoma (PCNSL, a diffuse large B cell lymphoma confined to the brain) (Schwindt et al., 2006).

**Cytogenetics**

**Cytogenetics morphological**

Only two of the five cases reported by the Kyoto group showed a t(3;6)(q27:p21-22).

**Genes involved and proteins**

**BCL6**

**Location**
3q27.3

**Protein**
706 amino acids; composed of a NH2-term BTB/POZ domain (amino acids 1-130 (32-99 according to Swiss-Prot) which mediates homodimerization and protein-protein interactions with other corepressors (including HDAC1 and NCO1R2/SMRT to constitute a large repressing complex, another transcription repression domain (191-386), PEST sequences (300-417) with a KKYK motif (375-379), and six zinc finger at the C-term (518-541, 546-568, 574-596, 602-624, 630-652, 658-681), responsible for sequence specific DNA binding.

Transcription repressor; recognizes the consensus sequence: TTCCT(A/C)GAA (Albagli-Curiel, 2003).

Role in germinal centers of lymphoid follicles. BCL6 prevents ATM and TP53 to induce apoptosis in response to DNA rearrangements such as somatic hypermutation and class switch recombination.

Therefore essential for normal B cell development.

**HIST1H4I**

**Location**
6p22.1

**Protein**
Component of the nucleosome. Histones play a major role in DNA repair, replication and transcription.

**Result of the chromosomal anomaly**

**Hybrid gene**

**Description**

Breakpoints in HIST1H4 are located within the single exon to 3' of the terminal palindrome; the breakpoint in BCL6 was located within the major translocation cluster.

**References**


This article should be referenced as such: