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Gene Section
Short Communication

MYH11 (myosin heavy chain)

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Online updated version : http://AtlasGeneticsOncology.org/Genes/MYH11ID43.html
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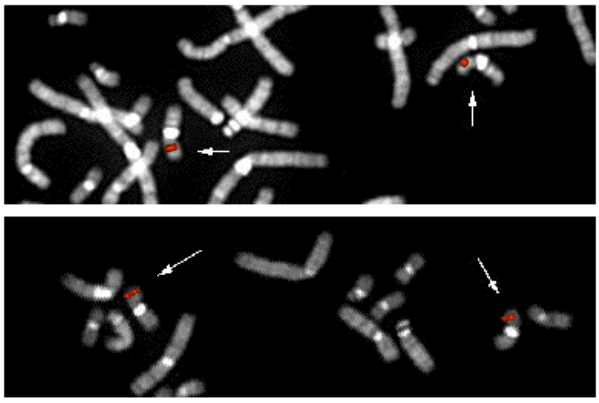
Identity

HGNC (Hugo): MYH11

Location: 16p13

Local order: proximal (in 16p13.1) from CBP (in 16p13.3) involved in the t(8;16), but distal of MRP, also in 16p13.1

DNA/RNA



c-MYH11 (16p13) in normal cells: PAC 114C15 (top) and PAC 893C15 (below) - Courtesy Mariano Rocchi.

Transcription

Alternate splicing in 3'.

Protein

Description

The protein's name is MYST; 214 KDa, 1857 amino acids known; N-term ATPase globular domain responsible for actin binding and
mechanical movement, and a C-term long repeat of coil-coil domain to facilitate filament aggregates; forms hetero-hexameres.

Expression

Smooth muscle.

Function

Muscle contraction.

Homology

Member of the myosin II family.

Implicated in

inv(16)(p13q22), t(16;16)(p13;q22), and del(16)(q22) in acute non lymphoblastic leukaemia (ANLL) or myelodysplastic syndromes (MDS)

--> CBFb - MYH11

Disease

Nearly pathognomonic of M4eo-ANLL: with eosinophilia; frequent CNS involvement.

Prognosis

High CR rate; better prognosis than most other ANLL.

Cytogenetics

The 3 chromosome anomalies are variants of each other.

Hybrid/Mutated gene

5' CBFb - 3' MYH11.

Abnormal protein

The N-trem and most of CBFb is fused to the MYH11 C-term with its multimerization domain.

References

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van der Reijden BA, Dauwerse JG, Wessels JW, Beverstock GC, Hagemeijer A, van Ommen GJ, Breuning MH. A gene for a myosin peptide is disrupted by the inv(16)(p13q22) in acute nonlymphocytic leukemia M4Eo. Blood. 1993 Nov 15;82(10):2948-52

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