

Meeting abstract

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Cancer/testis antigen 45 is expressed in a nuclear speckles-like pattern in human tumor cell lines

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The cancer/testis antigen (CT) family is defined by its specific expression pattern. In most cases CT antigens are expressed in normal human tissue only in germline cells and some tumors. Because of their restricted expression pattern CT antigens are regarded as potential targets for vaccine immunotherapy. Little is known about the functions of the various CT antigens. Some of these CT antigens (CT 7; MAGE A3/6) seem to be involved in the dysregulation of cell-cycle control and increased cell proliferation. The monoclonal antibody Ki-A10 detects a nuclear antigen with a unique distribution pattern in normal human tissues and tumors. The antigen is now characterized as cancer/testis antigen 45 (CT45).

The accurate localisation of CT45 could provide details about its function. Therefore immunofluorescence stainings with subsequent confocal laser microscope analysis were performed to deliver precise data about the nuclear localisation of CT45. Different human tumor celllines (L428, HT1080, WS1-CLS, SW872) and 5-aza-2'-deoxycytidine treated human peripheral blood lymphocytes were stained with mab Ki-A10. All stainings showed an irregular and dotlike pattern, which is wellknown for nuclear speckles (interchromatin granule clusters). Nuclear speckles are dynamic structures known to harbour many proteins of the pre-mRNA splicing machinery. In addition CT45 shows a clear homology to a DEAD-Box protein (DDX26). DEAD-Box proteins are generally believed to be RNA helicases, which in turn are localised in nuclear speckles. Due to these results we believe that CT45 could be involved in pre-mRNA splicing.