Hunting the feeder cell in multiple myeloma

European research has investigated the identity of stem cells that help to propagate tumour cells in a so-far incurable cancer, multiple myeloma.

Multiple myeloma (MM) is a cancer of plasma cells where abnormal cells accumulate within bones and interfere with production of normal blood cells. Understanding the pathogenesis of the disease will help to find a cure; as yet there are only therapies to extend survival.

One promising research avenue lies in the identification of ‘feeder’ cells that promote the growth of tumour cells. Research has suggested that cancer stem cells persist in tumours and may cause relapse and metastasis.

The EU-funded MSCNET project aimed to identify cells that would propagate tumour growth. Cooperation between members of MSCNET means they have access to multiparametric flow cytometry (MFC), real-time polymerase chain reaction (PCR) assays as well as cDNA-chip and PepChip technology. They also shared biological samples with specific clinical information and animal models for in vitro and in vivo transplantation studies.

Comprehensive exploration of mice models and cell lines ruled out possible candidates while identifying several cells that could play a ‘feeder’ role. In particular, in a mouse myeloma, CD138+ malignant plasma cells were enough to propagate tumour growth. MSCNET recommended that further investigations be carried out as this stem cell component appears to be more complex.

MSCNET created an information platform that can contribute to accurate definition of stem or feeder cells in MM. Sustainable targeted therapy for this cancer or long-term control depends on identification of cells that control the growth of the tumour.

Related information

| Report Summary | Final Report Summary - MSCNET (Myeloma Stem Cell Network - A translational programme identifying and targeting the early myeloma cell hierarchy) |

Subjects

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Last updated on 2012-03-20
Retrieved on 2019-05-24