LEUKEMIA AND VEGF
Project ID: 224783
Funded under: FP7-PEOPLE

Role of angiogenesis in leukemia

From 2009-01-01 to 2012-12-31, closed project

Project details

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<th>Total cost:</th>
<th>Topic(s):</th>
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<td>EUR 100 000</td>
<td>PEOPLE-2007-4-3.IRG - Marie Curie Action: &quot;International Reintegration Grants&quot;</td>
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<th>EU contribution:</th>
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<td>EUR 100 000</td>
<td>FP7-PEOPLE-2007-4-3-IRG See other projects for this call</td>
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<th>Coordinated in:</th>
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<td>Italy</td>
<td>MC-IRG - International Re-integration Grants (IRG)</td>
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Objective

Our interest is to understand the role of VEGF expression and angiogenesis in leukemogenesis. Recently, emerging data is suggesting that in addition to promoting the growth and metastatic spread of solid tumors, angiogenesis may play an important role also in the pathophysiology of hematological malignancies. Clinical studies indicate that leukemia patients express high levels of pro-angiogenic factors such as VEGF and have increased angiogenesis in the bone marrow. However, these findings are mostly correlative and genetic proof that VEGF expression and angiogenesis support leukemogenesis is still lacking. Furthermore, the molecular mechanisms leading to high VEGF production in leukemia have not been elucidated. The transcription factor HIF-1α is the main positive regulator of VEGF expression. We therefore hypothesize that HIF-1α upregulation may cause high VEGF expression in leukemic blasts and propose to: 1) Elucidate the cause of VEGF expression in leukemic cells; 2) Study the effect of HIF-1α and VEGF overexpression on normal hematopoiesis; 3) Study the effect of HIF-1α and VEGF overexpression on leukemia onset and progression. We plan to achieve these objectives by an inter-disciplinary approach consisting of the analysis of in vitro experiments, in vivo data and clinical data. The expression of HIF-1α will be analyzed in leukemia clinical specimens and cell lines in correlation with VEGF levels, angiogenesis and disease progression. In parallel, in vivo studies in mice will address whether overexpression of HIF-1α or VEGF perturbs normal hematopoiesis and promotes leukemogenesis. These mouse models will be instrumental to test the efficacy of anti-angiogenesis and anti-Hif-1α inhibitors in the future. Funding of this proposal will foster the European reintegration of a talented scientist with extensive training in the United States while also strengthening the cooperation of European institutions with prominent research centers in the United States.

Related information

Result In Brief  Hypoxia and leukaemia
Report Summaries  Final Report Summary - LEUKEMIA AND VEGF (Role of angiogenesis in leukemia)
Coordinator

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Activity type: Private for-profit entities (excluding Higher or Secondary Education Establishments)

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Activity type: Research Organisations

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Subjects

Coordination and Cooperation - Scientific Research

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