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Oncogene SPI1

National Cancer Institute

Source

National Cancer Institute. *Oncogene SPI1*. NCI Thesaurus. Code C18393.

SPI1 is an oncogene specifically activated in acute murine erythroleukemias, induced by the Friend spleen focus forming virus. It encodes the transcription factor PU.1, normally expressed in all hematopoietic lineages except in T-cells. An ETS-domain transcription factor essential for the development of myeloid (osteoclast progenitors) and B-lymphoid cells. Graded expression of this transcription factor appears to specify distinct cell fates in the hematopoietic system. A low concentration of PU.1 protein induces the B-cell fate, whereas a high concentration promotes macrophage differentiation. PU.1 is thought to regulate transcription of FMS and CD18/11B, proteins central to the osteoclast phenotype, and is required for p47-phox promoter activity in myeloid cells. PU.1 expression is increased with the induction of osteoclastogenesis by 1, 25-dihydroxyvitamin D3. The human gene is located at 11p11.2.