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(71) Applicant *(for all designated States except US)*: **NEVADA CANCER INSTITUTE** [US/US]; 10000 West Charleston Boulevard, Suite 260, Las Vegas, NV 89135 (US).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **MA, Yupo** [US/US]; 2740 Lakecrest Drive, Las Vegas, NV 89128 (US).

(74) Agent: **HAILE, Lisa, A.**; DLA Piper US LLP, 4365 Executive Drive, Suite 1100, San Diego, CA 92121-2133 (US).

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(54) Title: TARGETING OF SALL4 FOR THE TREATMENT AND DIAGNOSIS OF PROLIFERATIVE DISORDERS ASSOCIATED WITH MYELODYSPLASTIC SYNDROME (MDS)

(57) Abstract: The present invention discloses nucleic acids, proteins, and antibodies for SALL4 (including isoforms SALL4A, SALL4B, and SALL4C), a zinc finger transcriptional factor. Further, methods are disclosed which demonstrate that constitutive expression of SALL4 increases leukemogenic potential in cells of model animal systems. Moreover, constitutive expression of select isoforms (e.g., SALL4B) in transgenic mice demonstrate that these animals develop myelodysplastic syndrome (MDS)-like signs and symptoms, including subsequent acute myeloid leukemia (AML), which is transplantable. The disclosure also provides methods for identifying and purifying embryonic stem cells, adult stem cells, cancer stem cells, including leukemia stem cells, methods for identifying substances which bind to and/or modulate SALL4, methods for diagnosing MDS in a subject, and methods of treating a subject presenting MDS, AML and other forms of leukemia.