

Biography



Elaine Dzierzak received her PhD in Biology from Yale University, where she studied the molecular basis for immunoglobulin specificity and regulated expression. She did her postdoctoral training at the Whitehead Institute for Biomedical Research (MIT) and was the first to demonstrate the expression of a retrovirally transduced therapeutic gene in hematopoietic cells after bone marrow stem cell transplantation. At the National Institute for Medical Research (London), her research laboratory initiated novel studies on the embryonic origins of hematopoietic stem cells. Her results changed the long-held textbook dogma of the yolk sac origins of the adult hematopoietic system and showed that the first hematopoietic stem cells are autonomously generated in the body of the mammalian embryo, the aorta-gonads-mesonephros region. In 1996 she moved her research group to Erasmus University (Rotterdam), where she has been Professor of Developmental Biology and Co-director of the Master of Science Program in Molecular Medicine.

Her research continues to be focused on the development and molecular biology of the long-lived, rare stem cells for the blood. Recently, she showed that the first hematopoietic stem cells are derived from specialized cells lining the major embryonic blood vessels. Her work is also focused on the development of mesenchymal stem cells that serve to support the growth of hematopoietic stem cells. It is expected that the identification of molecules involved in the embryonic generation and expansion of hematopoietic stem cells will provide unique insights for the improvement of clinical cell replacement therapies for blood-related genetic diseases and leukemias.