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Discoveries in recent years have suggested that adult stem cells might have the ability to differentiate into cell types from different germ layers. For instance, neural stem cells from the brain, which are derived from ectoderm, can differentiate into ectoderm, mesoderm and endoderm. Stem cells from the bone marrow, which is derived from mesoderm, can differentiate into liver, lung, GI tract and skin, which are derived from endoderm and mesoderm. This phenomenon is referred to as stem cell transdifferentiation or plasticity. It can be induced by modifying the growth medium when stem cells are cultured in vitro or transplanting them to an organ of the body different from the one they were originally isolated from. More recent findings suggest that pluripotent stem cells may reside in adult tissues in a dormant state. These cells are referred to as "very small embryonic like" -"VSEL" stem cells, and display pluripotency in vitro. As VSEL cells are present in virtually all adult tissues, including lung, brain, kidneys, muscles, and pancreas. Co-purification of VSEL cells with other populations of adult stem cells may explain the apparent pluripotency of adult stem cell populations. There is however not yet a&#65533;consensus among biologists on the prevalence and physiological and therapeutic relevance of stem cell plasticity. &#65533; <img
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