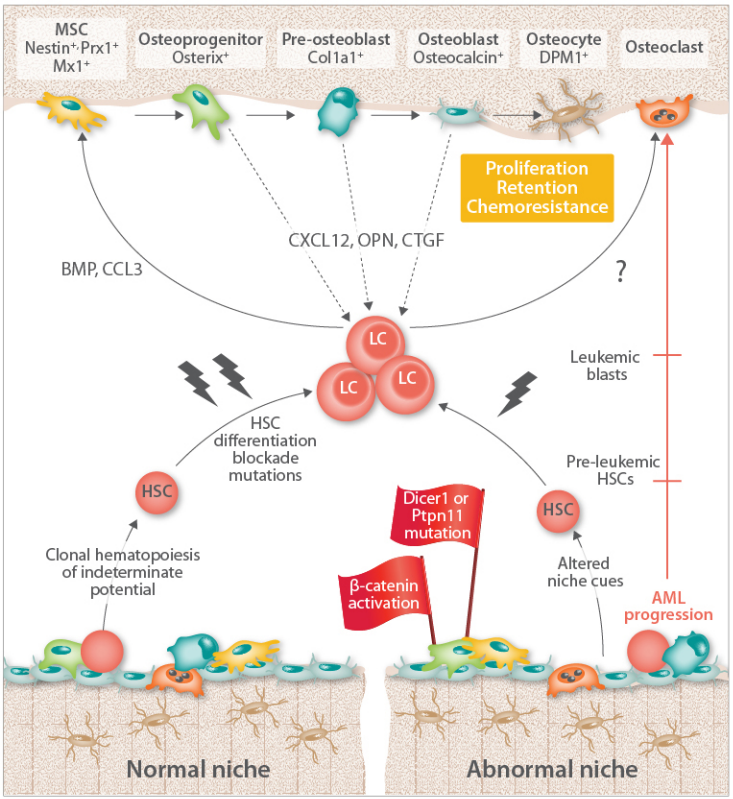
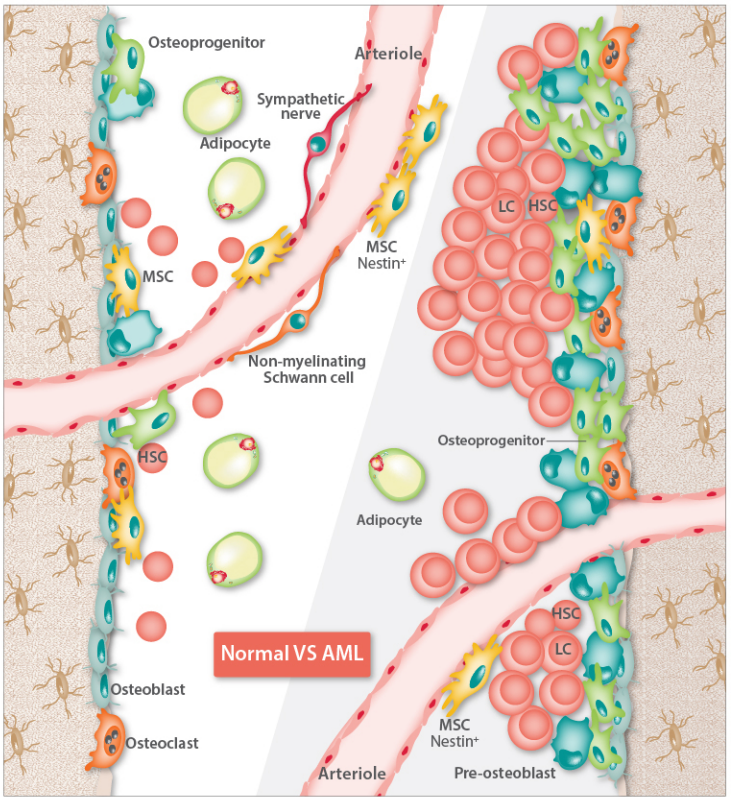
Role of the osteogenic niche in the maintenance and expansion of hematopoietic stem and progenitor cells as well as in their oncogenic transformation into leukemia cells

Osteogenic niche in HSC maintenance and leukemogenesis



- Osteolineage cells or earlier cells, such as MSCs, orchestrate a network of signals to maintain the stemness of HSCs and prompt hematopoietic activities
- Genetic mutations in osteolineage cells could lead to MDS and leukemia

Normal- versus AML- bone marrow microenvironment



- In AML bone marrow, leukemic blasts displace HSCs from the protective niche area and occupy this sanctuary
- AML cells create or expand the existing niche by inducing osteogenic but inhibiting adipogenic differentiation in MSCs

Le *et al.*, Haematologica, 2018