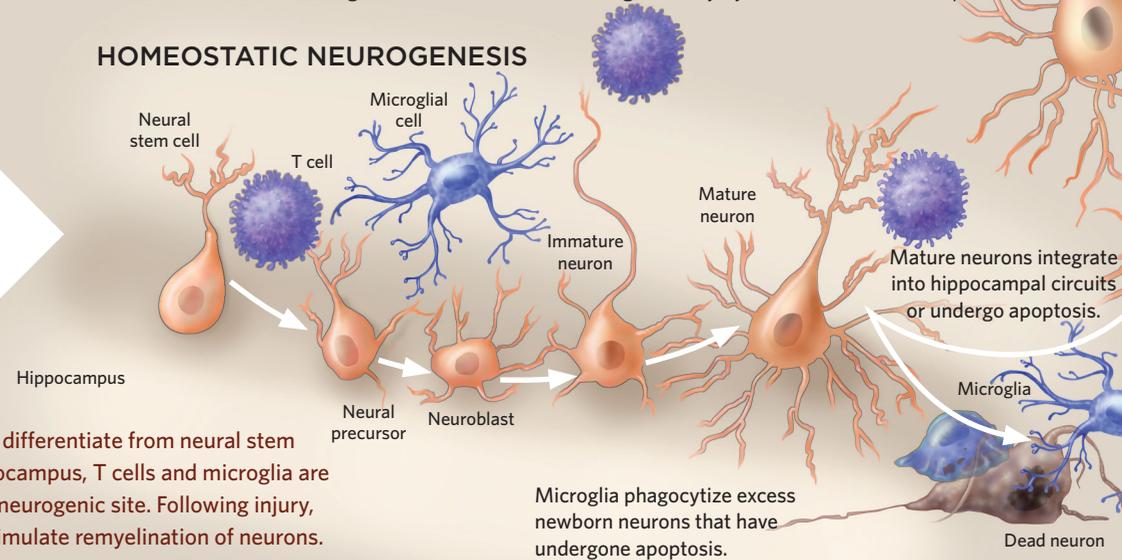


IMMUNE CELLS HELP OUT

The cells of the mammalian immune system do more than just fight off pathogens; they are also important players in stem cell function and are thus crucial for maintaining homeostasis and recovering from injury. Here are a few examples.

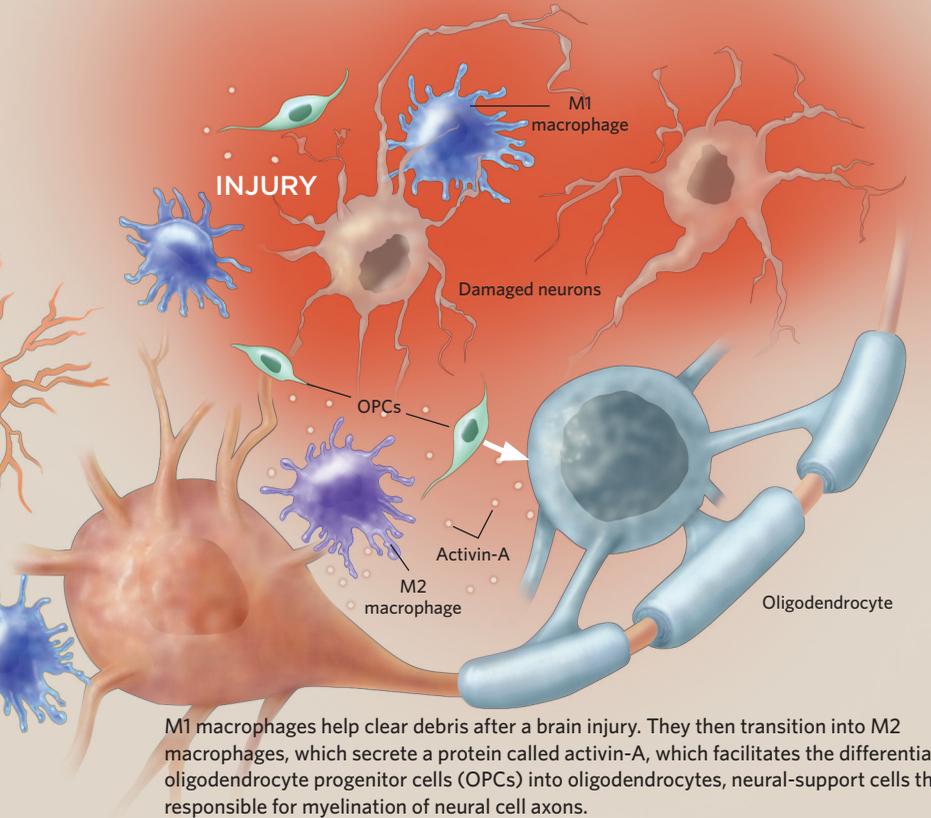
BRAIN

HOMEOSTATIC NEUROGENESIS



As new neurons differentiate from neural stem cells in the hippocampus, T cells and microglia are recruited to the neurogenic site. Following injury, macrophages stimulate remyelination of neurons.

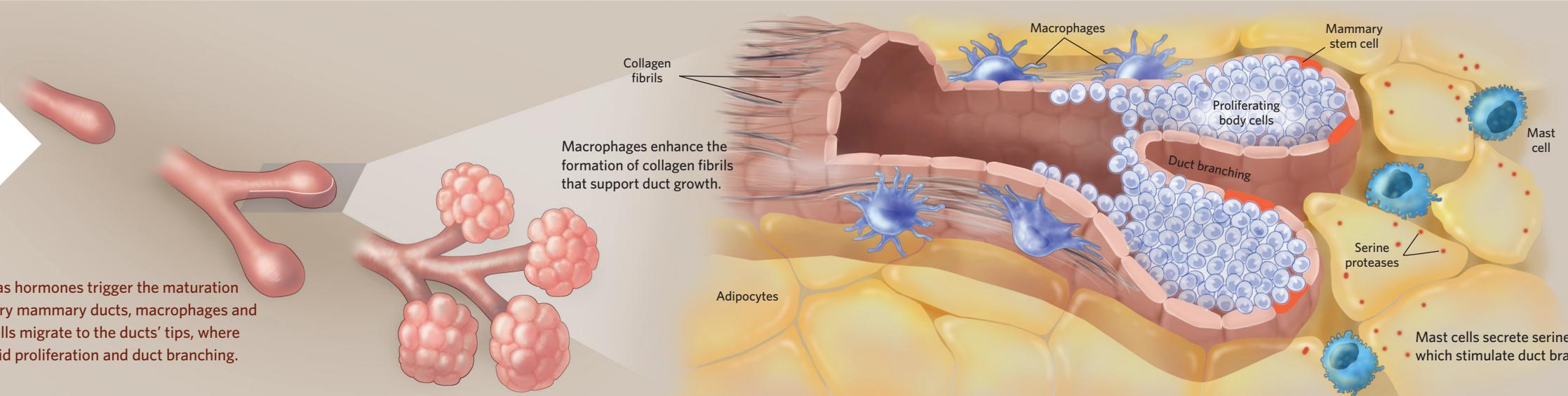
INJURY



M1 macrophages help clear debris after a brain injury. They then transition into M2 macrophages, which secrete a protein called activin-A, which facilitates the differentiation of oligodendrocyte progenitor cells (OPCs) into oligodendrocytes, neural-support cells that are responsible for myelination of neural cell axons.

MAMMARY GLANDS

During puberty, as hormones trigger the maturation of the rudimentary mammary ducts, macrophages and other immune cells migrate to the ducts' tips, where they support rapid proliferation and duct branching.

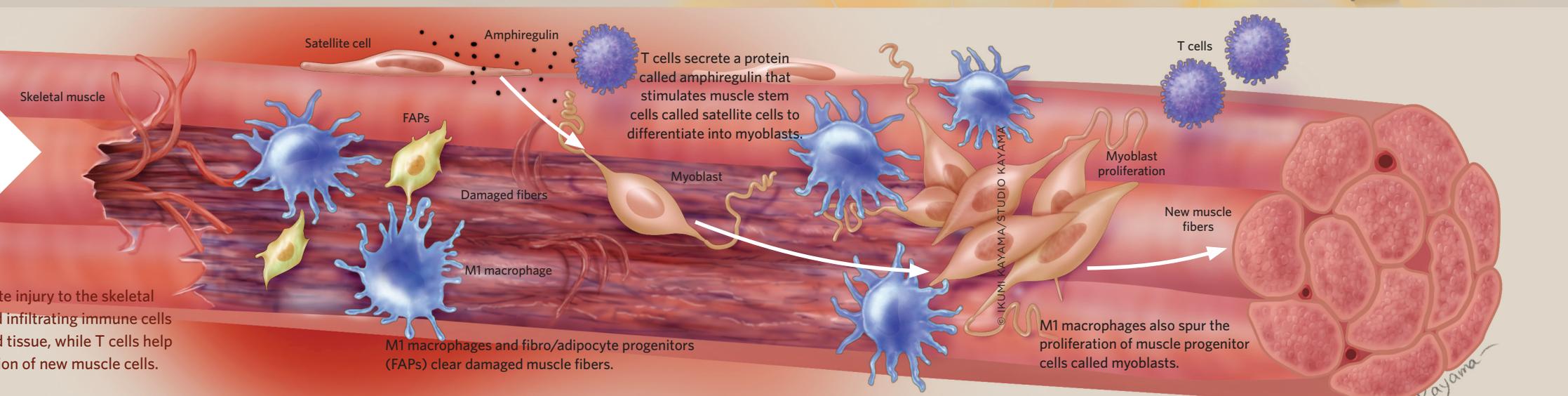


Macrophages enhance the formation of collagen fibrils that support duct growth.

Mast cells secrete serine proteases, which stimulate duct branching.

MUSCLE

Following an acute injury to the skeletal muscle, local and infiltrating immune cells remove damaged tissue, while T cells help spur the generation of new muscle cells.



M1 macrophages and fibro/adipocyte progenitors (FAPs) clear damaged muscle fibers.

M1 macrophages also spur the proliferation of muscle progenitor cells called myoblasts.

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