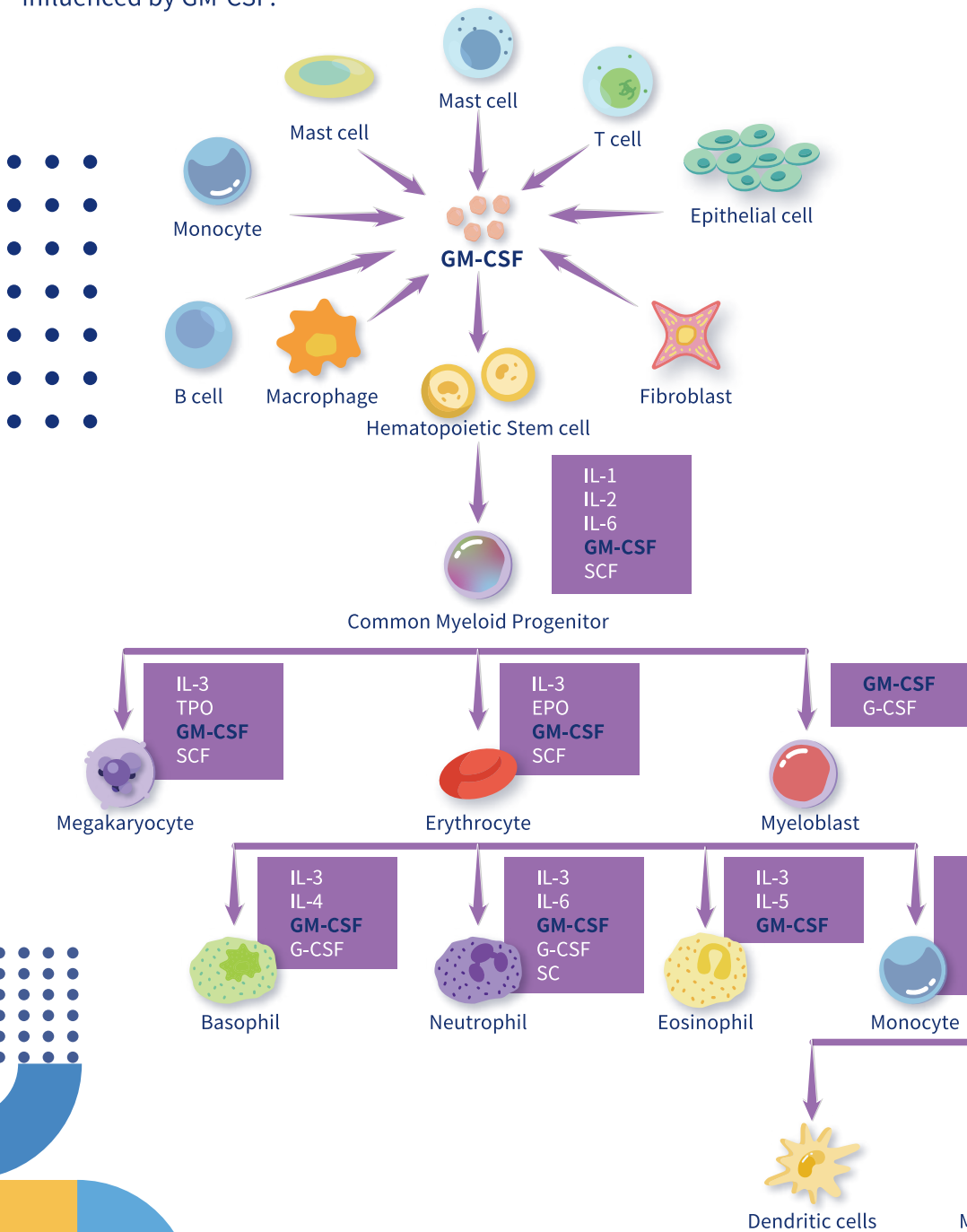


A micromanager: Granulocyte-macrophage colony-stimulating factor (GM-CSF) from growth factor to immune modulator

What role does GM-CSF play in the immune system?

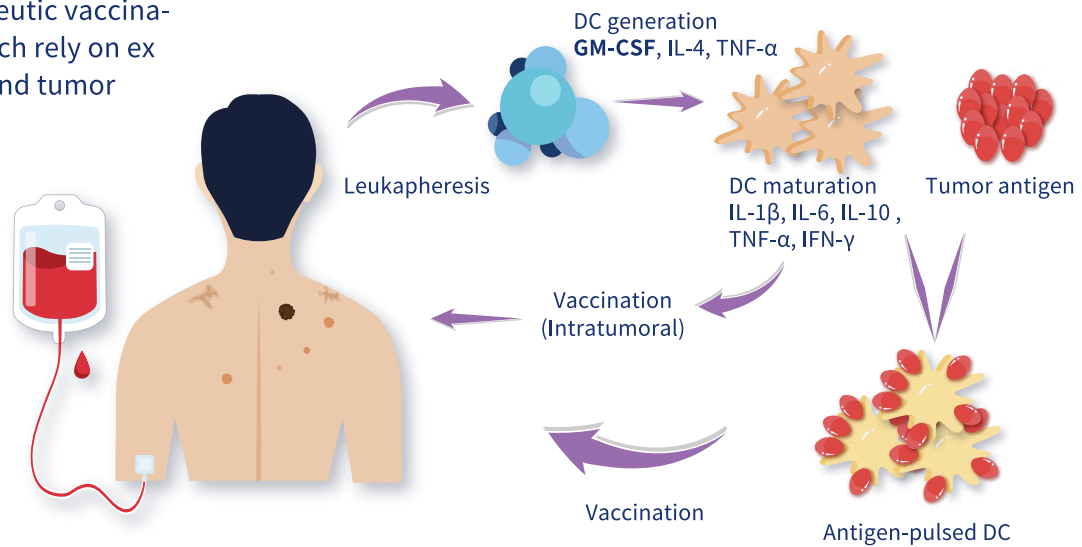
GM-CSF is secreted by a wide range of cells, including monocytes-macrophages, T cells, B cells, mast cells, fibroblasts, and epithelial cells. And the proliferation, survival, maturation, and differentiation of numerous cells, such as neutrophils, monocytes, macrophages, and myeloid-derived dendritic cells, are all significantly influenced by GM-CSF.



| Cat. | Product |
|--------|-----------------------------|
| C01116 | GM-CSF, Human |
| C01118 | G-CSF, Human |
| C01117 | M-CSF, Human |
| C01177 | SCF, Human |
| C01126 | TPO (Thrombopoietin), Human |
| C01001 | IL-1 α , Human |
| C01002 | IL-1 β , Human |
| C01004 | IL-2, Human |
| C01005 | IL-3, Human |
| C01006 | IL-4, Human |
| C01007 | IL-5, Human |
| C01008 | IL-6, Human |
| C01012 | IL-10, Human |
| C01016 | IL-13, Human |
| C01026 | IL-21, Human |
| C01039 | IL-33, Human |
| C01080 | IFN- γ , Human |
| C01047 | TNF- α , Human |
| C01088 | TGF β -1, Human |

DCs development and differentiation

DCs are frequently produced using GM-CSF-based protocols in promising therapeutic vaccination methods which rely on ex vivo production and tumor antigen loading.



M1/M2 macrophages polarization

Based on phenotype and function, typically, there are two types of macrophages that can be distinguished, M1 and M2.

M1 is helpful in the elimination of infections and tumor cells. They play a significant role in maintaining homeostasis and the removal of parasites, including tissue remodeling and regeneration, wound healing, and anti-inflammatory processes.

Also, GM-CSF could induce M1 macrophage polarization and activate macrophages to exert an antitumor function.

