



FIGURE 80-1 Schematic events in neutrophil production, recruitment, and inflammation. The four cardinal signs of inflammation (rubor, tumor, calor, dolor) are indicated, as are the interactions of neutrophils with other cells and cytokines. G-CSF, granulocyte colony-stimulating factor; IL, interleukin; PMN, polymorphonuclear leukocyte; TNF- α , tumor necrosis factor α .

Cell	Stage	Surface Markers ^a	Characteristics
	MYELOBLAST	CD33, CD13, CD15	Prominent nucleoli
	PROMYELOCYTE	CD33, CD13, CD15	Large cell Primary granules appear
	MYELOCYTE	CD33, CD13, CD15, CD14, CD11b	Secondary granules appear
	METAMYELOCYTE	CD33, CD13, CD15, CD14, CD11b	Kidney bean-shaped nucleus
	BAND FORM	CD33, CD13, CD15, CD14, CD11b, CD10, CD16	Condensed, band-shaped nucleus
	NEUTROPHIL	CD33, CD13, CD15, CD14, CD11b, CD10, CD16	Condensed, multilobed nucleus

^aCD = Cluster Determinant; ● Nucleolus; ● Primary granule; ● Secondary granule.

FIGURE 80-2 Stages of neutrophil development shown schematically. Granulocyte colony-stimulating factor (G-CSF) and granulocyte-macrophage colony-stimulating factor (GM-CSF) are critical to this process. Identifying cellular characteristics and specific cell-surface markers are listed for each maturational stage.