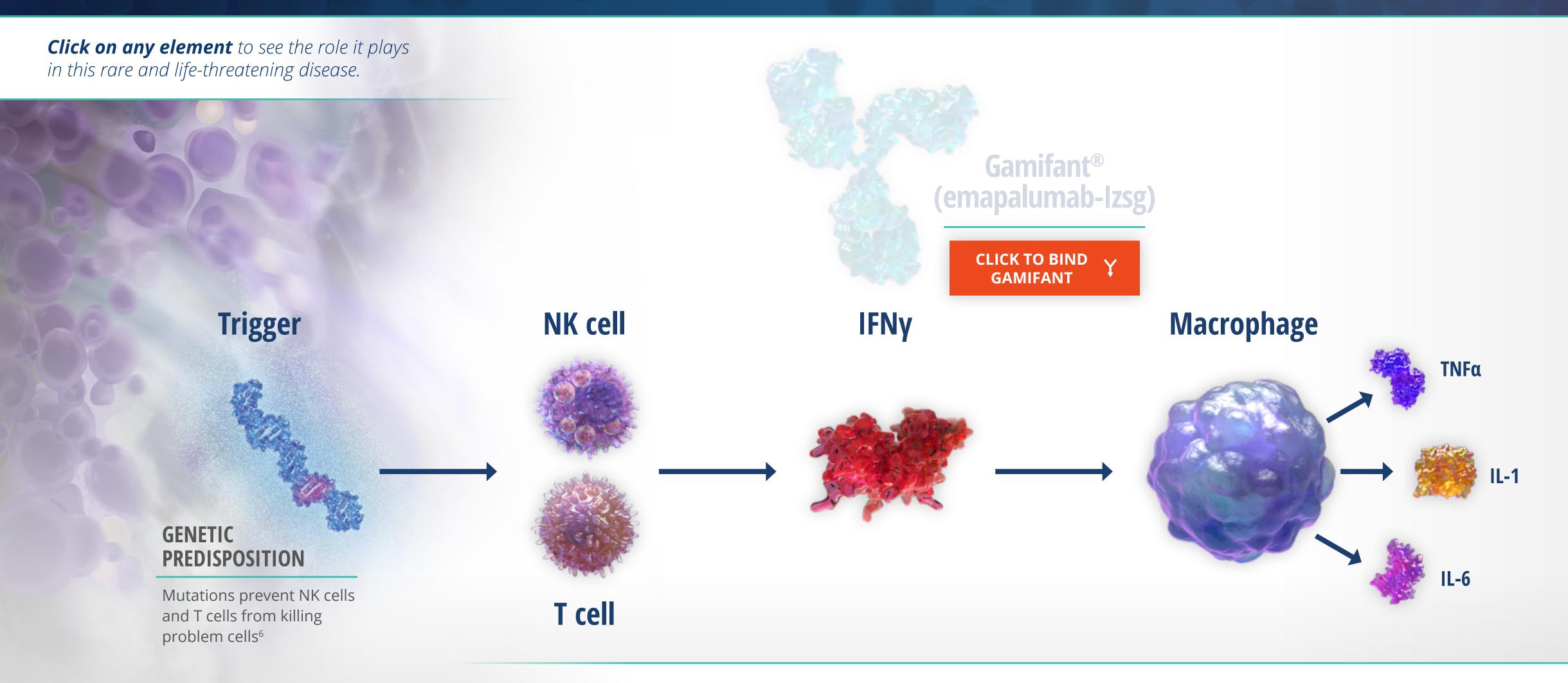
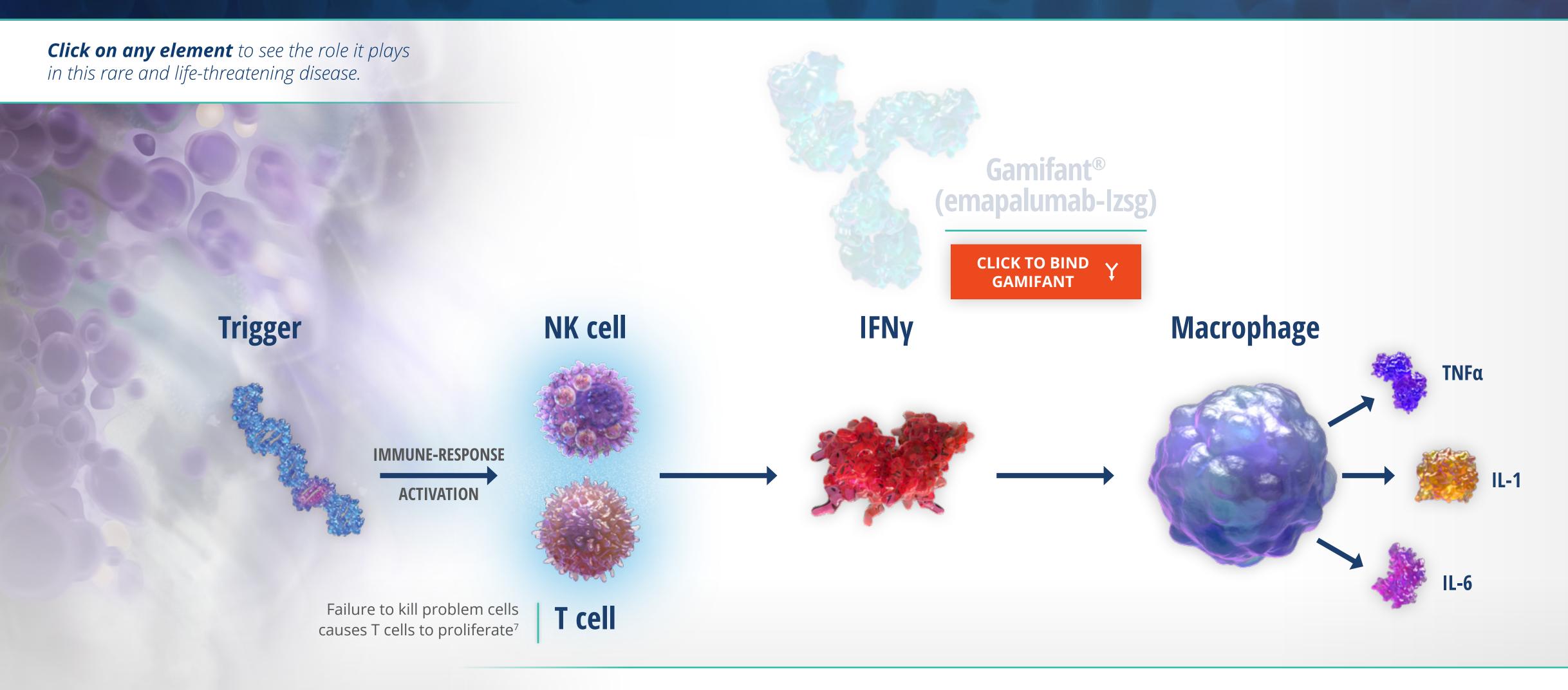
A central and upstream cytokine that induces hyperinflammation in primary HLH¹⁻⁵



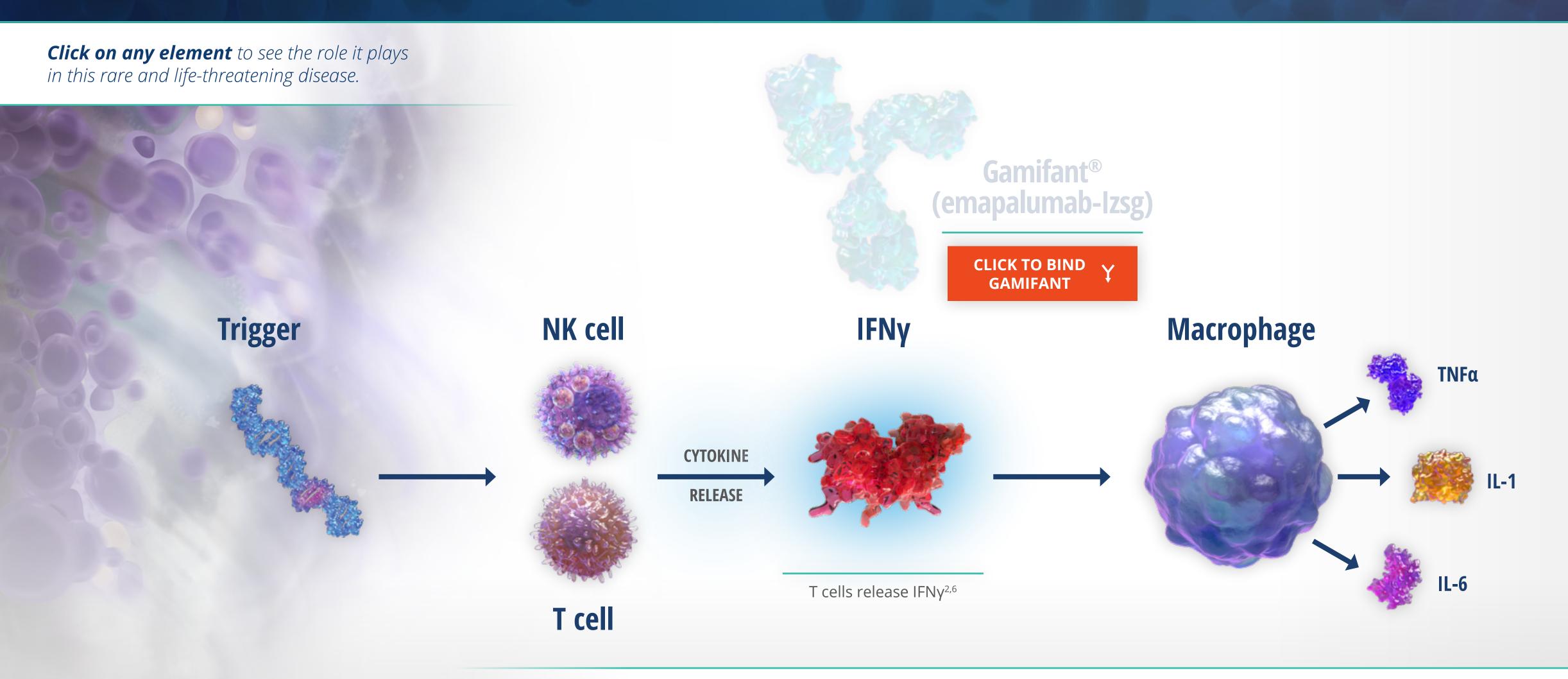
In primary HLH, genetic mutations prevent perforin pore formation needed for cell lysis.⁶

A central and upstream cytokine that induces hyperinflammation in primary HLH¹⁻⁵



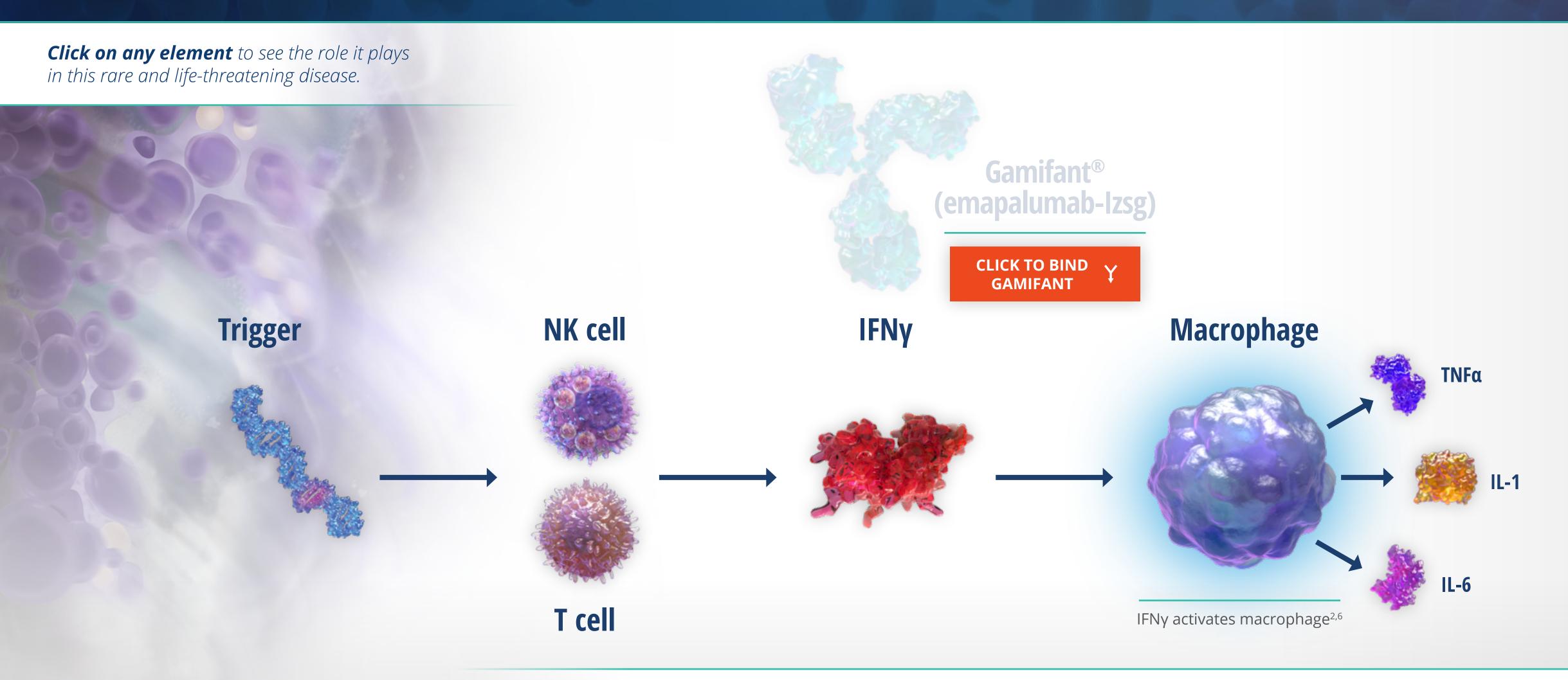
The failure to kill antigen-presenting cells leads to the proliferation and hyperactivation of T cells.⁷

A central and upstream cytokine that induces hyperinflammation in primary HLH¹⁻⁵



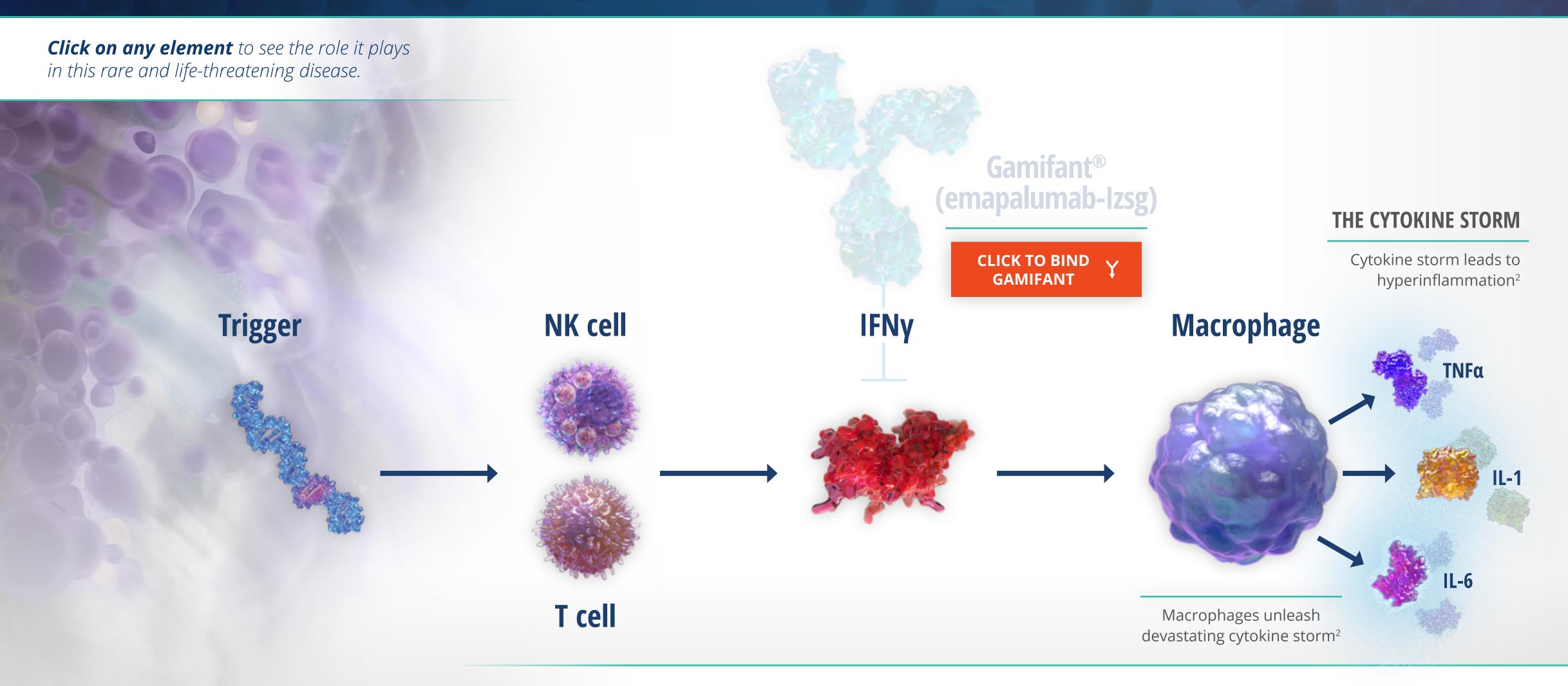
Activated macrophages release even more T cells and inflammatory cytokines—most notably IFNy.^{2,6}

A central and upstream cytokine that induces hyperinflammation in primary HLH¹⁻⁵



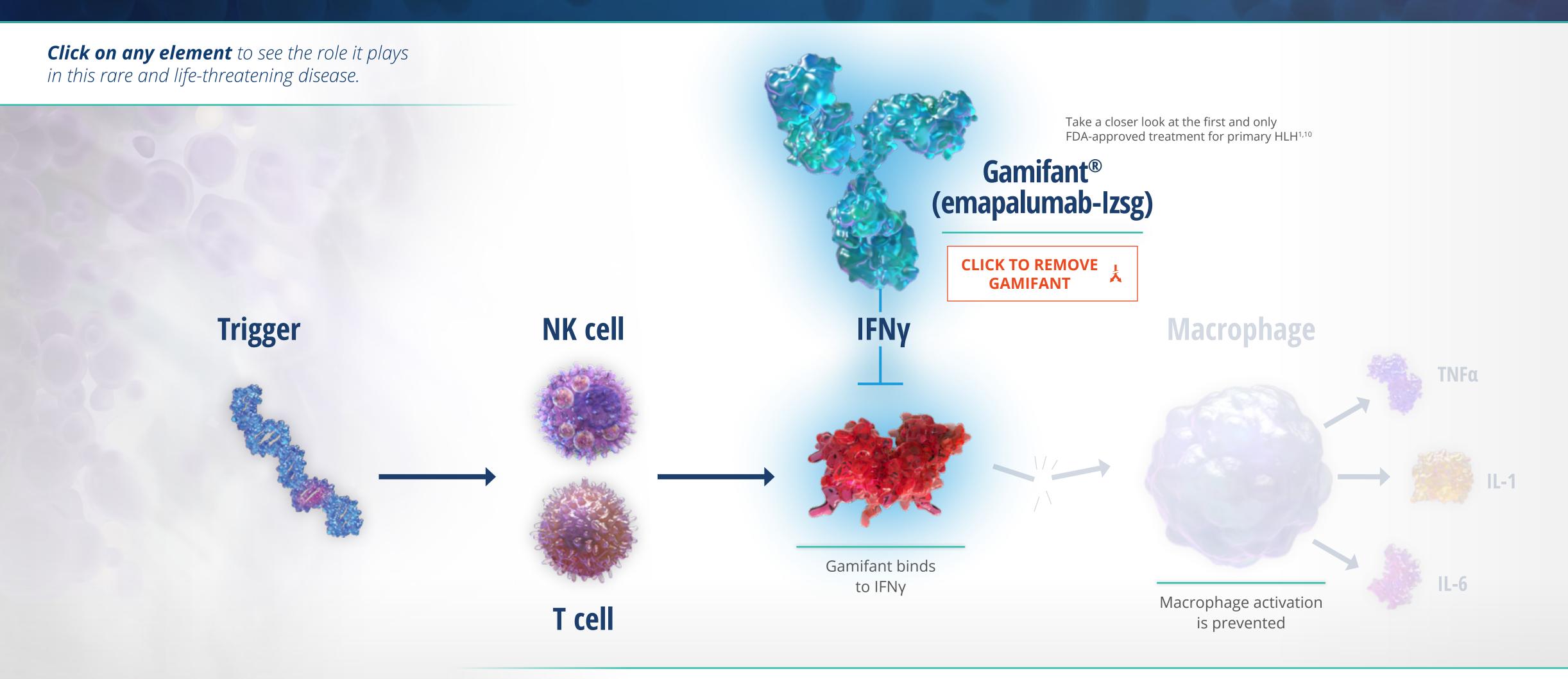
Once IFNy is released, it binds directly to the macrophage's cell receptors.⁷

A central and upstream cytokine that induces hyperinflammation in primary HLH¹⁻⁵



► The activated macrophage releases even more cytokines, including but not limited to tumor necrosis factor alpha, interleukin-1, and interleukin-6. This "cytokine storm" leads to the hyperinflammatory symptoms of primary HLH.²

A central and upstream cytokine that induces hyperinflammation in primary HLH¹⁻⁵



As a result, the cytokine storm is subdued.¹