



## humankine Human Cell Expressed Cytokines for the Culture, Activation and Polarization of Macrophages

Macrophages are specialized immune cells derived from monocytes and are involved in the detection, phagocytosis and destruction of bacteria and non-self antigens. Macrophages can also initiate immune responses through the presentation of antigens to circulating T cells and cytokine secretion. They have also been implicated in multiple diseases, such as cancer, rheumatoid arthritis, diabetes and inflammatory bowel disease.

Proteintech can offer HumanKine® human cell expressed cytokines for the in vitro culture, activation, and polarization of macrophages. You can find a summary in the table below:

| Macrophage Subset | HumanKine® Cytokine | Cat no  |
|-------------------|---------------------|---------|
| M1                | GM-CSF              | HZ-1002 |
|                   | TNF $\alpha$        | HZ-1002 |
|                   | IFN- $\gamma$       | HZ-1301 |
| M2                | M-CSF               | HZ-1192 |
|                   | IL-4                | HZ-1004 |
|                   | IL-10               | HZ-1145 |
|                   | TGF- $\beta$        | HZ-1011 |
|                   | IL-6                | HZ-1019 |

\*Inquire for GMP grade

HumanKine® cytokines are authentic human proteins expressed in human cells, and possess native post-translational modifications, glycosylation and folding.