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Microglial differentiation kit (Qk519)

Type: Growth factor discovery kits

Available for purchase: Qk519: Microglial differentiation kit

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Product Information

For differentiation of induced pluripotent stem cells (iPSCs) into microglial cells.

Microglia are the primary innate immune cells of the central nervous system (CNS), playing critical roles in brain development, maintenance and repair. Studying human microglia has historically been challenging due to the difficulty of obtaining primary cells from human donors. To overcome this limitation, deriving microglia from induced pluripotent stem cells (iPSCs) has emerged as a promising solution.

The kit includes carefully optimized growth factors required to efficiently guide iPSCs into microglia.

Species reactivity

- human

Product Information

- >98%, by SDS-PAGE quantitative densitometry
- Animal origin-free (AOF) and carrier protein-free
- Expressed in *E. coli*
- Bioactivity Guaranteed
- Manufactured in our Cambridge, UK laboratories
- Lyophilized

Reconstitution instructions

- Discovery kits

Featured applications

- Differentiation of induced pluripotent stem cells to microglia

Further quality assays

- Mass spectrometry: single species with expected mass
- Recovery from stock vial: >95%
- Endotoxin: <0.05 EU/µg protein

Scientific Information

Bioactivity

Human BMP-4 - Qk038 - **25 µg**

Used for differentiation of mesenchymal cells to adipocytes, epithelial cancer EMT, and regulating neuronal and glial cell development.

FGF2-G3 145 aa - Qk052 - **50 µg**

A thermostable engineered form of FGF-2. FGF2-G3 145 aa is the 145 aa active domain of FGF-2 with the functional half-life increased from <10 h (wild-type) to >7 days (FGF2-G3).

Human Flt3L - Qk087 - **25 µg**

Stimulates the survival, proliferation, and differentiation of various early myeloid and lymphoid progenitor cells. Flt3L is commonly used in the differentiation of hematopoietic stem cells into dendritic cells.

Human GM-CSF - Qk076 - **25 µg**

Commonly used in cell culture to stimulate the differentiation and maturation of human-induced pluripotent stem cells or peripheral blood monocytes to myeloid cells.

Human M-CSF - Qk075 - **25 µg**

Used *in vitro* for the differentiation of human induced pluripotent stem cell (iPSC)-derived macrophages as well as the maintenance and development of monocytes in hematopoietic stem cell culture.

Human IL-3 – Qk090 - **25 µg**

Stimulate the differentiation and maturation of human induced pluripotent stem cells towards mast cells, basophils, neutrophils, eosinophils, monocytes, and megakaryocytes.

Human IL-34 PLUS™ – Qk091 - **25 µg**

Plays a key role for the development and maintenance of tissue-resident macrophages such as Langerhans cells in the skin and microglia in the brain.

Human SCF - Qk078 - **25 µg**

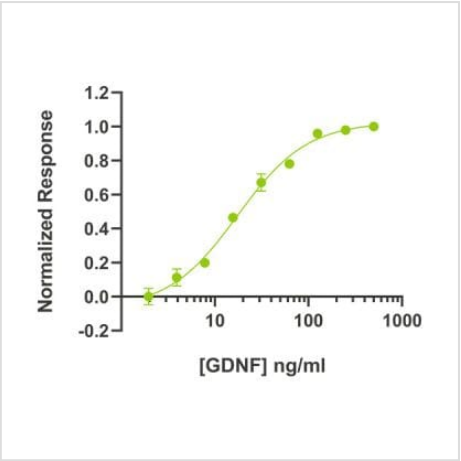
Qkine has optimized the SCF manufacture process to produce a highly bioactive protein with excellent lot-to-lot consistency for enhanced experimental reproducibility.

Human TPO – Qk098 - **25 µg**

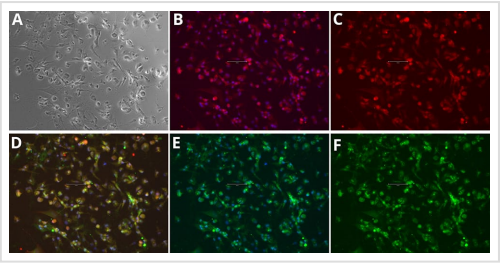
Thrombopoietin (TPO) is a cytokine which stimulates the production and differentiation of megakaryocytes, regulating platelet production.

Human VEGF – Qk048 - **25 µg**

VEGF 165 is commonly used with human-induced pluripotent stem cells or embryonic stem cells-derived endothelial cells for developing human vascular tissue models.



Purity



Immunocytochemistry of microglia markers in differentiated iPSCs. Phase Contrast [A], P2RY12 and Hoechst 33258 [B], P2RY12 [Red, C], IBA-1, P2RY12 and Hoechst 33258 [D], IBA-1 and Hoechst 33258 [E], IBA-1 [Green, F]. Images were acquired using the EVOS M5000 system (scale bar = 150 µm). iPSC differentiated using microglial differentiation kit (Qk519).

Application note | Differentiation of induced pluripotent stem cells (iPSCs) into microglia

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Original product page: https://ryan.calliope-alpha.ts.net/product/microglial-differentiation-kit-qk519/

PDF generated: 12 May 2026