



Product webpage Qk010

Product highlight

Animal free TGF- β 1 PLUS™ (Qk010)

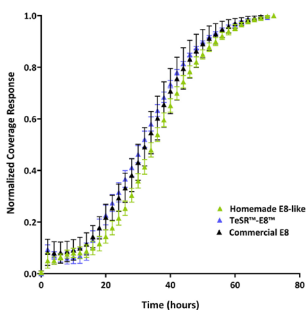
Qkine recombinant TGF- β 1 PLUS™ is the only bioactive entirely animal origin-free recombinant human TGF- β 1 protein for increased reproducibility and compatibility with chemically-defined stem cell and organoid media.

Why animal origin-free?

- Protein purity and identity – prevents cross contamination with endogenous growth factors and other proteins¹
- Sterility – no contamination with animal pathogens or mycoplasma
- Scalability and cost
- Reduced therapeutic risk and regulatory compliance

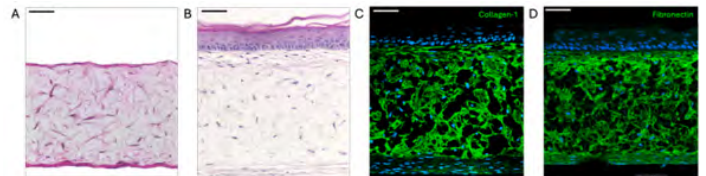
TGF- β 1 PLUS™ can be used to maintain iPSC cultures in chemically defined media formulations

Qkine homemade E8-like media formulation including TGF- β 1 PLUS™ (Qk010), FGF2-G3 (Qk053) (full recipe and protocol²) was as efficient in the culture and maintenance of iPSC media as commonly used proprietary formulations.



TGF- β 1 PLUS™ facilitates dermal equivalent formation in the REPROSKIN™ full thickness skin model

Qkine TGF- β 1 PLUS™ supplementation supports extracellular matrix deposition and facilitates dermal-epidermal compartmentalization in full thickness skin equivalents (full application note³).

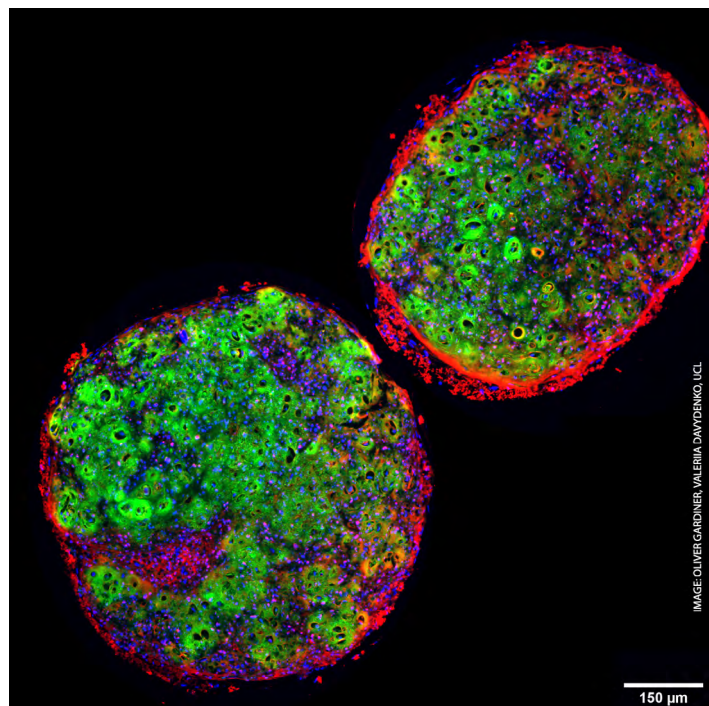


Advantages of homemade vs proprietary media

- Cost and scalability
- Traceable raw materials
- Flexibility for optimization

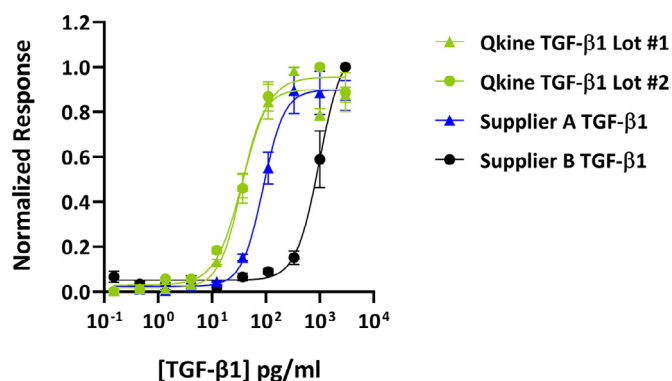
Representative H&E micrographs of dermal (A) and full thickness (B) equivalents, supplemented with Qkine TGF- β 1 PLUS™ throughout the first 19 days of fibroblast culture. Representative immunofluorescent micrographs for collagen-1 (C, green) and fibronectin (D, green) depict substantial extracellular matrix deposition within the dermal compartment of full thickness skin equivalents. Nuclei were counterstained with Hoechst 33342 (blue). Scale bars = 50 μ m.

Qkine TGF-β1 PLUS™ is optimal for the induction of chondrogenic differentiation in iPSC derived mesodermal progenitor cells



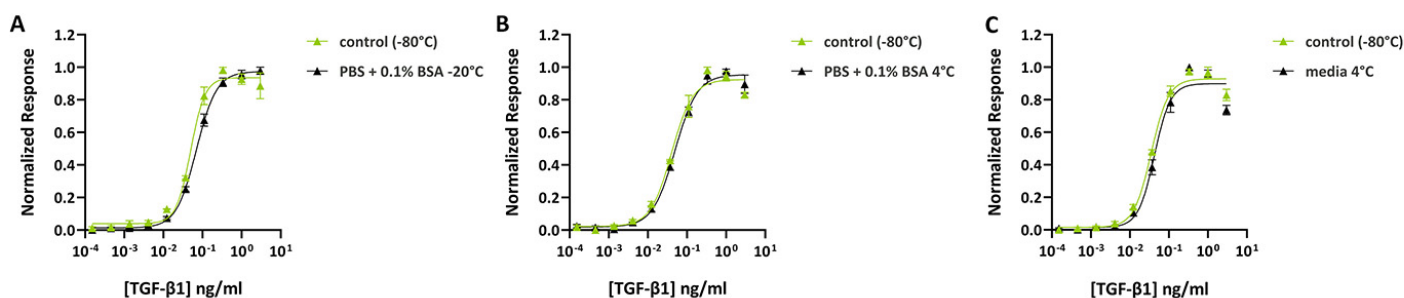
Animal origin-free TGF-β1 PLUS™ bioactivity is higher than mammalian expressed TGF-β1

Qkine TGF-β1 PLUS™ has high and consistent bioactivity lot-to-lot. Qkine TGF-β1 PLUS™ was more bioactive than comparable mammalian-expressed TGF-β1 from 2 major alternative suppliers.



Bioactivity was determined using a TGF-β1-responsive (CAGA) firefly luciferase reporter in transiently transfected HEK293T cells. Firefly luciferase activity was measured and normalized to the control, Renilla luciferase.

TGF-β1 PLUS™ is stable in buffer and culture media for >1 month



Qkine TGF-β1 PLUS™ remains stable and bioactive once reconstituted and stored for 1 month at -20°C (A), +4°C in storage buffer (PBS+0.1% BSA, B) and +4°C in cell culture media (C).

All Qkine recombinant proteins are:

Animal origin-free, purification tag free, carrier free and supplied in the pure bioactive form.

Individually optimized during development to be highly bioactive with lot-to-lot testing to guarantee consistency in bioactivity.

Sterility, mycoplasma and endotoxin tested for maximum compatibility with sensitive stem cell and organoid cultures.

Manufactured by us in our ISO 9001 facility in Cambridge, UK ensuring full traceability and data transparency.

References

- Olsen, O. E., Skjærvik, A., Størdal, B. F., Sundan, A. & Holien, T. TGF-β contamination of purified recombinant GDF15. PLoS One 12, e0187349 (2017). doi.org/10.1371/journal.pone.0187349
- Commercial versus in-house media: A comparative study of human induced pluripotent stem cell maintenance. <https://qkine.com/application-note/commercial-versus-in-house-media/>
- Generation of a Full Thickness Human Skin Equivalent Using Alvetex® Scaffold and Qkine Growth Factor Supplements. <https://qkine.com/application-note/generation-of-a-full-thickness-human-skin-equivalent-using-alvetex-scaffold-and-qkine-growth-factor-supplements/>