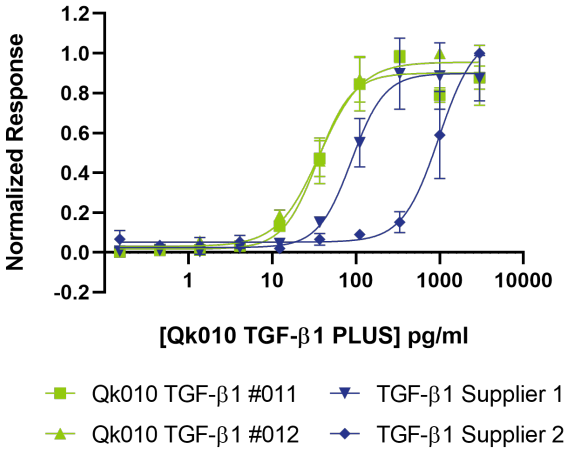
Technote

TGF-β1 PLUS is highly bioactive



TGF-β1 PLUS has higher bioactivity than alternative suppliers.
Quantitative luciferase reporter assays show TGF-β1 PLUS (Qk010, green) has higher bioactivity (EC50=1.4 pM for lot #011 and #012) when compared with mammalian expressed TGF-β1 from two alternative suppliers (blue, Supplier 1 EC50=3.5 pM, Supplier 2 EC50=38 pM.)

Introduction:
Transforming growth factor beta-1 (TGF-β1) is a common component of human pluripotency maintenance media. However, as TGF-β1 is a highly complex protein, it is difficult to manufacture in microbial expression systems. For stem cell culture, animal-free growth factors are preferable as they have lower contaminants and higher lot-to-lot consistency. Qk010 TGF-β1 PLUS is the world's first animal-free TGF-β1, manufactured for highly reproducible results.

Method:
The bioactivity of Qkine TGF-β1 PLUS was compared with mammalian expressed alternatives. Bioactivity was determined using a TGF-β1-responsive (CAGA) firefly luciferase reporter in transiently transfected HEK293T cells. Cells were treated with a serial dilution of TGF-β1 for 6 hours in triplicate. Firefly luciferase activity was measured and normalized to the control, Renilla luciferase.

Results:
Qk010 animal-free TGF-β1 PLUS (expressed in *E. coli*) has higher bioactivity than mammalian expressed alternatives. TGF-β1 PLUS shows exceptional lot-to-lot consistency, providing a reliable source of highly active TGF-β1.