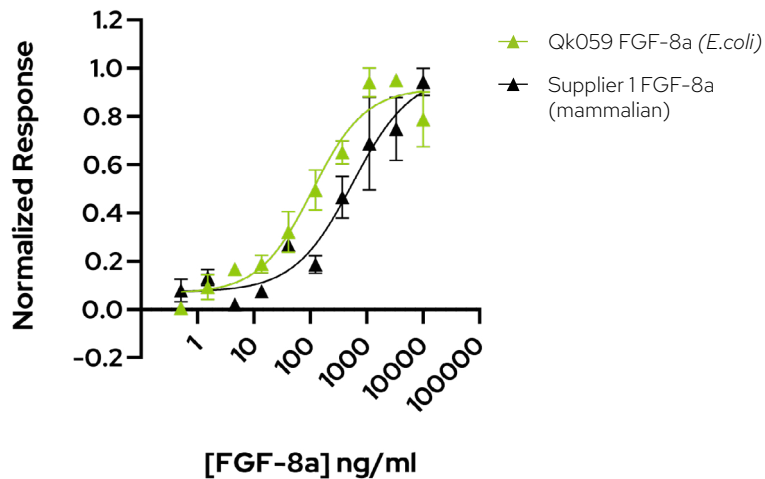


Highly bioactive animal-free FGF-8a



Quantitative luciferase reporter assay shows FGF-8a (Qk059, green) has a higher bioactivity with an EC50 of 108.1 ng/ml (5 nM) compared to mammalian-expressed FGF-8a (Supplier 1, black) with an EC50 of 567 ng/ml (27 nM). Data for Qk059 lot #104406.

TNQk059-110923-v1.2

Introduction:

Fibroblast growth factor 8a (FGF-8a) is a spliced form of FGF-8, a member of the FGF family. FGF-8a plays a crucial role in regulating embryonic development and is involved in the proliferation, differentiation, and migration of induced pluripotent, embryonic, and neural stem cells. For stem cell cultures, animal-free growth factors are preferable in comparison to mammalian-expressed growth factors which have more risks of batch-to-batch variability and contamination from animal-derived ingredients. Qkine FGF-8a is expressed in *E. coli* to ensure the bioactivity is reproducible.

It is crucial to have high purity growth factors to ensure stem cell cultures are reproducible and physiologically relevant. Growth factors developed in an animal-free expression system have better lot-to-lot consistency and less risk of endogenous contamination than animal-derived proteins. Qkine developed a carrier-free and tag-free FGF-8b expressed in *E. coli* for exceptionally high lot-to-lot consistency.

Method:

The bioactivity of Qk059 FGF-8a and mammalian-expressed FGF-8a from an alternative supplier was determined using the Promega serum response element luciferase reporter assay in HEK293T cells. Cells were treated in triplicate with a serial dilution of FGF-8a in the presence of 10 µg/ml heparin for 3 hours. Firefly luciferase activity was measured and normalized to the control Renilla luciferase activity.

Results and conclusion:

The bioactivity comparison between Qkine FGF-8a and FGF-8a from an alternative supplier showed that Qkine FGF-8a protein has a higher bioactivity than the mammalian-expressed growth factor. Qkine FGF-8a offers an alternative animal-free protein expressed in *E. coli* with high bioactivity suitable for neural stem cell culture and FGF-8a-dependent applications.