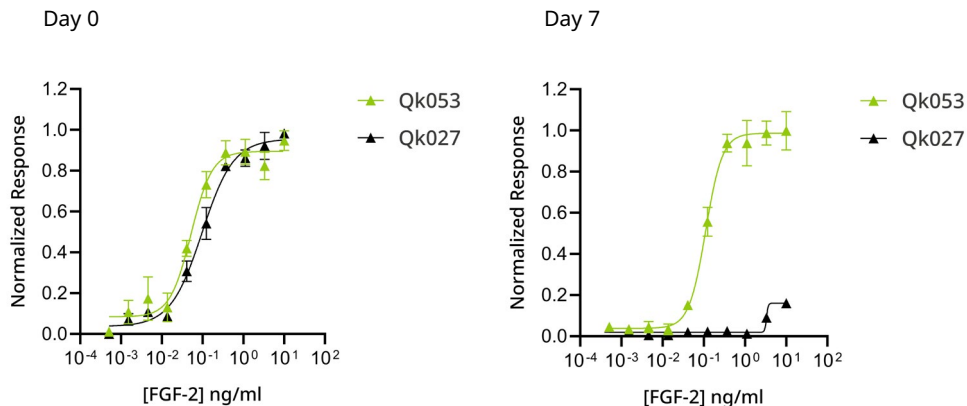


Thermostable FGF2-G3 protein (Qk053) remains stable and highly bioactive in culture

Technote

FGF2-G3 (Qk053)



Quantitative luciferase reporter assay comparing bioactivity of WT FGF-2 (Qk027) with thermostable FGF2-G3 (Qk053).

HEK293T transfected with the Promega serum response element luciferase reporter assay were treated for 3 hours with FGF2-G3 (Qk053, green) and WT FGF-2 (Qk027, black) pre-incubated with HEK293T conditioned media, bioactivity is comparable at day 0 but only FGF2-G3 remains bioactive at day 7.

Fibroblast growth factor 2 (FGF-2) is an essential growth factor for regulating several biological processes and a critical component for stem cell maintenance in feeder-free media. Qkine FGF2-G3 (Qk053) was engineered with nine amino acid substitutions to stabilize its structure and expressed in *E. coli* creating the only animal origin-free, protein-tag-free stabilized FGF2-G3 available commercially. This enhanced stability makes FGF2-G3 a highly bioactive and thermostable (heat stable) engineered form of FGF-2, resulting in improved culture conditions with less frequent media changes.

Thermostability of FGF2-G3 (Qk053)

The bioactivity of WT FGF-2 (Qk027) and FGF2-G3 (Qk053) was compared, both were equally bioactive at day 0 (EC50 = 0.052 ng/ml and 0.097 ng/ml respectively).

Qkine thermostable FGF2-G3 (Qk053) maintained its bioactivity after incubation in HEK293T conditioned media at 37°C for 7 days (EC50 0.11 ng/ml), whereas WT FGF-2 lost its bioactivity.

FGF2-G3 provides a reliable source of animal origin-free, highly bioactive, and thermostable FGF-2 for stem cell culture and FGF2-dependent applications. The use of Qkine thermostable FGF2-G3 (Qk053) allows enhanced stem cell cultures with less frequent media changes improving self-renewal, maintenance and the reproducibility of subsequent differentiation for regenerative medicine applications.