

### Species matched growth factors for cellular agriculture including cultivated meat, fish, fat and dairy

Correspondence: [support@qkine.com](mailto:support@qkine.com)

Food Standards Agencies from around the world have continued support of alternative proteins and food innovation. In-depth reviews of current novel food frameworks, updating dossier submission platforms and updating food guidelines have resulted in further promise in this field.

With feedback from this progression and new guidelines from the [FDA \(Food and Drug Administration\)](#) in the US and [UK Food Standards Agency \(FSA\)](#), it is clear cultivated meat companies are being strongly advised to use growth factors with protein sequences that are 100% homologous to the species of animal they are cultivating in the production process. Growth factors from the target species also aid consumer acceptance and species-specific activity as well as regulatory considerations.

Qkine is dedicated to supporting the cellular agriculture industry by manufacturing high-purity and bioactive growth factors that are species-specific to cultivated cultures including porcine, bovine and fish.

#### Frequently used growth factors where the amino acid sequence is 100% conserved between human, bovine, and porcine species

Code	Product name	Species	Human to porcine	Human to bovine	Comments
<a href="#">Qk001</a>	Activin A	Human	100%	100%	Human sequence identical to porcine and bovine activin A
<a href="#">Qk047</a>	IGF-1	Human	100%	100%	Human sequence identical to porcine and bovine IGF-1
<a href="#">Qk045</a>	NRG-1	Human	100%	100%	Human sequence identical to porcine and bovine NRG-1
<a href="#">Qk010</a>	TGF-β1 PLUS	Human	100%	100%	Human sequence identical to porcine and bovine TGF-β1
<a href="#">Qk072</a>	TGF-β2	Human	100%	100%	Human sequence identical to porcine and bovine TGF-β2

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Code	Product name	Species	Human to porcine	Human to bovine	Comments
<a href="#">Qk011</a>	EGF	Human	~85%	-	Porcine EGF available ( <a href="#">Qk064-FG</a> ) Bovine EGF coming soon ( <a href="#">enquire for more information</a> )
<a href="#">Qk025</a>	FGF-2 (145 aa)	Human	~99%	~99%	Bovine/porcine FGF-2 (145 aa) available ( <a href="#">Qk040-FG</a> )
<a href="#">Qk027</a>	FGF-2 (154 aa)	Human	~99%	~99%	Bovine/porcine FGF-2 (154 aa) available ( <a href="#">Qk056-FG</a> )
<a href="#">Qk013</a>	HGF (NK1)	Human	~95%	~93%	Porcine HGF (NK1) available ( <a href="#">Qk061-FG</a> ) Bovine HGF (NK1) available ( <a href="#">Qk060-FG</a> )
<a href="#">Qk036</a>	LIF	Human	87%	88%	Porcine and bovine LIF coming soon
<a href="#">Qk044</a>	PDGF-BB	Human	~95%	91%	Bovine PDGF-BB ( <a href="#">Qk079-FG</a> ) Porcine PDGF-BB coming soon
<a href="#">Qk054</a>	TGF-β3	Human	~98%	~99%	Porcine TGF-β3 available ( <a href="#">Qk084-FG</a> ) Bovine TGF-β3 coming soon

## What is the future of growth factors for cultivated meat?

Cultivated meat, fish, fat and dairy are rapidly developing fields with the potential to impact global sustainability. Qkine is committed to supporting the cellular agriculture sector by extending the range of commercially available species-specific growth factors and supporting development of open collaborations, a scientific research base and credible long-term supply chain. Qkine species-specific high quality food grade growth factors have been developed to aid in regulatory dossier preparation, with full traceability of raw materials and extensive documentation. As with all Qkine growth factors these are subject to extensive QC and lot-to-lot bioactivity testing, conforming to our Nine Point Quality Commitment.

## For more information

Please contact our team: [customerservice@qkine.com](mailto:customerservice@qkine.com) if you would like to discuss commercial or academic collaborations, supply agreements or any aspects of growth factor optimization for cultivated meat, fish, fat, dairy and other products.

Visit: [qkine.com/cellular-agriculture/](https://qkine.com/cellular-agriculture/) for information on our high quality food grade range of proteins for cellular agriculture.



To explore our high-purity, animal-free bioactive proteins visit [qkine.com](https://qkine.com)

Qkine products are for research use and ex vivo cell manufacturing use only

Qkine Ltd, Unit 1, Murdoch House, Garlic Row, Cambridge, CB5 8HW  
[www.qkine.com](http://www.qkine.com) | +44 (0) 1223 491 486 | +1 866 877 2185

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