

## SUPPLEMENTARY DATA

### MINIREVIEW

## Ticks and the effects of their saliva on growth factors involved in skin wound healing

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**Table S1.** Key growth factors of skin wound healing (Bariantos et al, 2008; Greaves et al, 2013; Park et al, 2017; Larouche et al, 2018; Canedo-Dorantes and Canedo-Ayla, 2019).

	<b>Growth factor</b>	<b>Cell source</b>	<b>Cell target</b>	<b>Key function in wound healing</b>	<b>Stage / phase of wound healing</b>
<i>EGF family</i>	EGF	PL, FB, MP	KC, VEC, FB	↑ proliferation of KC, FB, VEC ↑ production of fibronectin; ECM degradation	fibroplasia and re-epithelization / proliferation phase
	HB-EGF	KC	KC	↑ KC migration	re-epithelization / proliferation phase
	TGF- $\alpha$	PL, MP, KC, FB, Ly	KC	↑ KC migration and proliferation Induction of angiogenesis	re-epithelization / proliferation phase
<i>FGF family</i>	FGF-2	FB, MP, EC, MS, SMC, PL, KC	KC, FB, EC	↑ migration KC, FB; mitogen for FB, KC; EC proliferation; regulation of synthesis and deposition of ECM; ↑ collagenase production	fibroplasia, angiogenesis, granulation tissue formation, re-epithelization / proliferation phase, tissue remodelling
	KGF-1 (FGF-7) KGF-2 (FGF-10)	FB, KC	KC	↑ proliferation and migration of KC; detoxification of ROS; mitogen for VEGF	re-epithelization and neovascularization / proliferation phase
<i>IGF family</i>	IGF-1	FB, MP, Ne, HC, PL, KC, Ly	FB, KC	↑ FB proliferation; ↑KC proliferation and differentiation; ECM deposition	fibroplasia and angiogenesis / proliferation phase
	PDGF	PL, FB, MP, VEC, VSMC, FC	MP, FB, Ne, Mo,	↑ chemotaxis of FB, Ne, Mo, SMC; ↑ MP-released growth factors; ECM production; ↑ expression of VEGF, IGF-1; ↑ proliferation and differentiation of FB to myoFB; removing old collagen	all wound healing phases

<i>PDGF family</i>	VEGF	PL, FB, MP, KC, EC, SMC, Ne	EC, Mo, MP,	↑ EC proliferation and migration; ↑ inflammatory cell recruitment	inflammatory phase; lymphangiogenesis; angiogenesis / proliferation phase
	PLGF	KC, EC	MP, FB	↑ chemotaxis of MP; ↑ FB migration	inflammatory phase; angiogenesis and granulation tissue formation / proliferation phase
<i>TGF-β family</i>	TGF-β	PL, FB, MP, KC	FB, MP, KC, Ne	↑ chemotaxis of Ne, MP; mitogen for FB; ↑ or ↓ proliferation of various cells; collagen synthesis;	all wound healing phases inflammation; angiogenesis; granulation tissue formation; re- epithelialization
<i>Scatter factor</i>	HGF	FB, KC	Ly, KC	leucocyte recruitment; ↓ inflammation	fibroplasia, angiogenesis, granulation tissue formation / proliferation phase
	GM-CSF		KC	↑ chemotaxis of Ne; ↑ proliferation of KC; ↑ EC proliferation and migration	inflammatory phase re-epithelization /proliferation phase
	CTGF	FB, Ne, Mo, PL, Ly	FB, EC	↑ proliferation and chemotaxis of FB; formation and remodelling of ECM; inductor of ECM proteins, scarring	fibroplasia, angiogenesis, granulation tissue formation and re-epithelization / proliferation phase

↑: stimulate, activate, promote

↓: reduce, decrease, inhibit

EC: Epithelial cells

FB: Fibroblasts

HC: Hepatocytes

KC: Keratinocytes

Ly: Lymphocytes

Mo: Monocytes

MP: Macrophages

Ne: Neutrophils

PL: Platelets

SMC: Smooth muscle cells

VEC: Vascular endothelial cells

VSMC: Vascular smooth muscle cells

ECM: Extracellular matrix

EGF: Epidermal growth factor

FGF: Fibroblast growth factor

HP-EG: Heparin-binding EGF

HGF: Hepatocyte growth factor

IGF-1: Insulin-like growth factor-1

PDGF: Platelet-derived growth factor

TGF- $\alpha$ : Transforming growth factor-alpha

TGF- $\beta$ : Transforming growth factor-beta

VEGF: Vascular endothelial growth factor

GM-CSF: Granulocyte macrophage colony stimulating factor

KGF: Keratinocyte growth factor

CTGF: Connective tissue growth factor

PLGF: Placental growth factor