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## Cell-cell interactions in the gastrointestinal tumour-microenvironment

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# **Cell-cell interactions in the gastrointestinal tumour-microenvironment**

*Lukas Hawinkels*

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Lukas J.A.C. Hawinkels

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*Cell-cell interactions in the gastrointestinal  
tumour-microenvironment*

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in 1980

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*Aan pap, mam en opa*



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## Abbreviations:

ADAM(T)	A disintegrin and metalloproteinase (with thrombospondin motive)
APC	Adenomatous polyposis coli
ALK	Activin receptor-like kinase
BIA	Bioactivity assay
bFGF	basic Fibroblast growth factor
BMP	Bone morphogenic protein
BSA	Bovine serum albumin
CAF	Cancer-associated fibroblast
CM	Conditioned medium
CRC	Colorectal cancer
CTGF	Connective tissue growth factor
DMEM	Dulbecco's modified eagle medium
ECM	Extracellular matrix
EMMPRIN	Extracellular matrix metalloproteinase inducer
EMT	Epithelial to mesenchymal transition
FAP	Familiar adenomatous polyposis
HNPCC	Hereditary non-polyposis colorectal cancer
HB-EGF	Heparin binding epidermal growth factor
HIF	Hypoxia inducible factor
HRP	Horse radish peroxidase
HSPG	Heparan sulphate proteoglycan
HUVEC	Human umbilical vein endothelial cells
IGF	Insulin like growth factor
IL	Interleukin
kDa	kilo Dalton
LAP	Latency associated protein
LLC	Large latent TGF- $\beta$ complex
LTBP	Latent TGF- $\beta$ binding protein
MAPK	Mitogen activated protein kinases
MCP-1	Monocyte chemoattractant protein-1
MHC	Major histocompatibility complex
MMP	Matrix metalloproteinases

## *Abbreviations*

MT-MMP	Membrane type matrix metalloproteinases
PAI-1	Plasminogen activator inhibitor-1
RT	Room temperature
SDS	Sodium dodecyl sulphate
SLC	Small latent TGF- $\beta$ complex
SMA	Smooth muscle actin
TGF- $\beta$	Transforming growth factor- $\beta$
TGF- $\beta$ RII	Transforming growth factor- $\beta$ receptor II
TIMP	Tissue inhibitor of metalloproteinase
TNF- $\alpha$	Tumour necrosis factor- $\alpha$
TNM	Tumour node metastasis
tPA	tissue-type Plasminogen activator
TSP	Thrombospondin
uPA	urokinase type Plasminogen activator
uPAR	uPA receptor
VEGF	Vascular endothelial growth factor