Novel Dual-Cell Therapy for Pancreatic Cancer

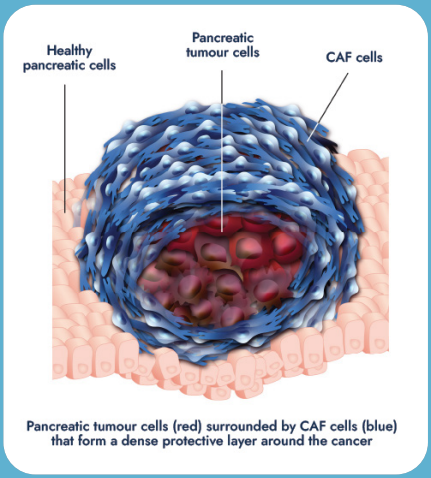
The Noxopharm proprietary drug candidate CRO-67 has been generated from Noxopharm's Chroma™ technology platform, focused on developing oncology drug candidates. CRO-67 has been selected as Noxopharm's drug candidate for pancreatic cancer due to its ability to act as a dual-cell therapy targeting both pancreatic cancer cells and the surrounding barrier cells.

Pancreatic Cancer

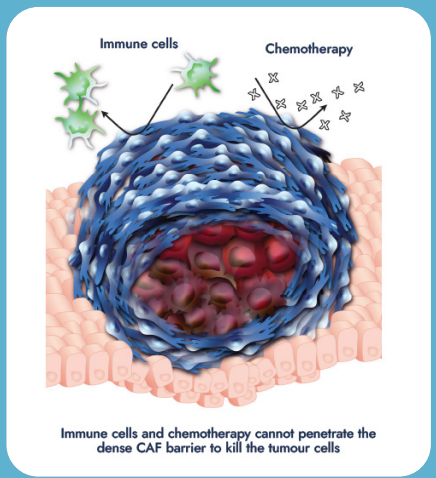
Pancreatic cancer is highly aggressive with low survival rates and is predicted to become the second leading cause of cancer related deaths in the US by 2030[i].

A unique feature of pancreatic cancer is that the tumours are surrounded by a particularly dense barrier of cancer-associated fibroblasts (CAFs). It has only relatively recently been discovered that this dense barrier layer is protecting and nurturing the cancer cells, and this is why pancreatic cancer is particularly difficult to treat.

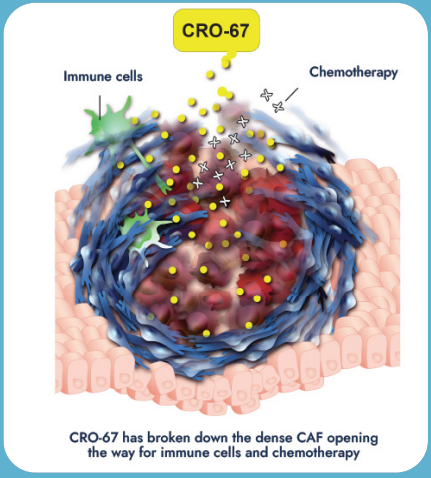
With this new knowledge, Noxopharm has developed a ground-breaking dual-cell therapy approach to treating pancreatic cancer that focuses on attacking both the cancer cells and the CAFs forming the barrier around the tumour with a single novel drug candidate – CRO-67.



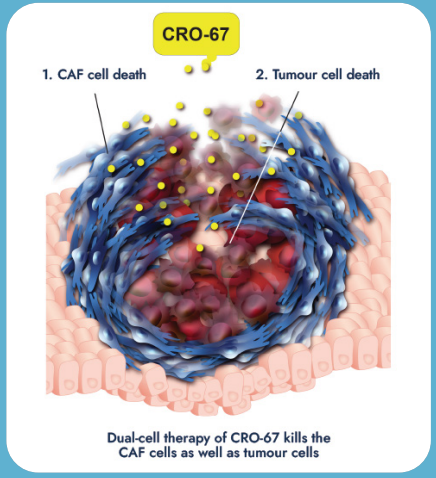
Pancreatic tumour cells (red) surrounded by CAF cells (blue) that form a dense protective layer around the cancer



Immune cells and chemotherapy cannot penetrate the dense CAF barrier to kill the tumour cells



CRO-67 has broken down the dense CAF opening the way for immune cells and chemotherapy



Dual-cell therapy of CRO-67 kills the CAF cells as well as tumour cells

The UNSW Sydney Pancreatic Cancer Explant Model

UNSW Sydney has developed a world-first explant model where tumours and the surrounding tissue are surgically removed from cancer patients kept alive in the laboratory for 12 days. Details on the model have been published in the highly regarded journal Nature: Scientific Reports[ii].

This cutting-edge model was used to measure the dual-cell targeting ability of Noxopharm's drug candidate CRO-67 against both the cancer and its surrounding barrier.

Noxopharm CRO-67

Results

On Day 12 the samples were tested across four parameters, all of which showed highly significant results:

- The number of cancer cells decreased
- The number of CAF (barrier) cells decreased
- Cell replication decreased
- Cell-death increased

	CRO-67 (µg/mL)	Average % Reduction vs Control	p-value
Tumour Cell Death	10	58%	0.003
	20	63%	0.0018
	50	85%	0.0002
Barrier Cell Death	10	51%	0.0018
	20	75%	<0.0001
	50	87%	<0.0001
Cell Replication	10	54%	<0.0001
	20	59%	<0.0001
	50	73%	<0.0001
	CRO-67 (µg/mL)	**Average % Increase vs Control**	**p-value**
Total Cell Death	10	298%	0.0123
	20	313%	0.0077
	50	621%	<0.0001

Table showing the effect of increasing concentrations of CRO-67 on pancreatic cancer cell and CAF (barrier) cell numbers after 12 days of treatment[iii]. There is a clear treatment effect where higher concentrations of CRO-67 resulted in lower cell numbers.

Significance p <0.05

This world-first study demonstrates CRO-67 as a novel dual-cell therapy, potently destroying both the cancer cells and their surrounding barrier. These highly promising results will now drive further studies to maximise the potential of this new approach to pancreatic cancer treatment.

REFERENCES

i. Rahib L, Smith BD, Aizenberg R, Rosenzweig AB, Fleshman JM, Matrisian LM. Projecting cancer incidence and deaths to 2030: the unexpected burden of thyroid, liver, and pancreas cancers in the United States. Cancer Res. 2014 Jun 1;74(11):2913-21. doi: 10.1158/0008-5472.CAN-14-0155. Erratum in: Cancer Res. 2014 Jul 15;74(14):4006. PMID: 24840647.

https://pubmed.ncbi.nlm.nih.gov/24840647/

ii. Kokkinos J, Sharbeen G, Haghighi KS, Ignacio RMC, Kopecky C, Gonzales-Aloy E, Youkhana J, Timpson P, Pereira BA, Ritchie S, Pandzic E, Boyer C, Davis TP, Butler LM, Goldstein D, McCarroll JA, Phillips PA. Ex vivo culture of intact human patient derived pancreatic tumour tissue. Sci Rep 11, 1944 (2021).

https://doi.org/10.1038/s41598-021-81299-0

iii. Kokkinos J, Sharbeen G, Haghighi KS, Youkhana J, Raina A, Pitiyarachchi O, Truong, Q, Wenholz, D, Laczka, O, Kumar, N, Goldstein D, Phillips PA. CRO-67 is a novel therapeutic for pancreatic cancer: implications for tumour and stromal reprogramming

Noxopharm Limited.
ABN 50 608 966 123
Level 20, Tower A, The Zenith, 821 Pacific Highway,
Chatswood NSW 2067 Australia

Investor, Corporate & Media enquiries:
info@noxopharm.com

www.noxopharm.com

@Noxopharm Limited
@noxopharm