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The ARRIVE Essential 10: author checklist

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These items are the basic minimum to include in a manuscript. Without this information, readers and reviewers cannot assess the reliability of the findings.

Item		Recommendation	Section/line number, or reason for not reporting
Study design	1	For each experiment, provide brief details of study design including: a. The groups being compared, including control groups. If no control group has been used, the rationale should be stated. b. The experimental unit (e.g. a single animal, litter, or cage of animals).	Study design is detailed in Method section. For each experiment, all the groups being compared include control groups. The experimental unit include gene/protein expression, number, weight and survival time
Sample size	2	a. Specify the exact number of experimental units allocated to each group, and the total number in each experiment. Also indicate the total number of animals used. b. Explain how the sample size was decided. Provide details of any *a priori* sample size calculation, if done.	Sample size is detailed in Statistical analysis of Method section and Figure legend (Cell experiment: n = 3; Animal experiment: n = 5; Human pancreatic tissue sample: n= 744). In general, no statistical methods were used to predetermine sample size. For the animal experiments, sample size was determined based on previous experience with xenograft models of pancreatic cancer and literature reports. For human samples, samples were collected untilwe felt the sample size was sufficient to give reliable estimates. For cell and biochemical data, we aimed to collect data from three biological replicates when possible.
Inclusion and exclusion criteria	3	a. Describe any criteria used for including and excluding animals (or experimental units) during the experiment, and data points during the analysis. Specify if these criteria were established *a priori*. If no criteria were set, state this explicitly. b. For each experimental group, report any animals, experimental units or data points not included in the analysis and explain why. If there were no exclusions, state so. c. For each analysis, report the exact value of *n* in each experimental group.	Inclusion and exclusion criteria of the animals during the experiment is detailed in Xenograft model of Method section. No data were excluded from analysis. The exact value of n is provided in Figure legend.
Randomisation	4	a. State whether randomisation was used to allocate experimental units to control and treatment groups. If done, provide the method used to generate the randomisation sequence. b. Describe the strategy used to minimise potential confounders such as the order of treatments and measurements, or animal/cage location. If confounders were not controlled, state this explicitly.	No randomization was done during group allocation. Animals of similar age and sex [littermates where possible] were used to control for covariates.
Blinding	5	Describe who was aware of the group allocation at the different stages of the experiment (during the allocation, the conduct of the experiment, the outcome assessment, and the data analysis).	Blinding criteria of IHC scoring is detailed in Tissue microarrays IHC staining assays of Method section.
Outcome measures	6	a. Clearly define all outcome measures assessed (e.g. cell death, molecular markers, or behavioural changes). b. For hypothesis-testing studies, specify the primary outcome measure, i.e. the outcome measure that was used to determine the sample size.	Outcome measures definition criteria is detailed in Method section. Hypothesis-testing studies was not used in this study.
Statistical methods	7	a. Provide details of the statistical methods used for each analysis, including software used. b. Describe any methods used to assess whether the data met the assumptions of the statistical approach, and what was done if the assumptions were not met.	Statistical methods are detailed in Statistical analysis of Method section.
Experimental animals	8	a. Provide species-appropriate details of the animals used, including species, strain and substrain, sex, age or developmental stage, and, if relevant, weight. b. Provide further relevant information on the provenance of animals, health/immune status, genetic modification status, genotype, and any previous procedures.	Experimental animals information are detailed in Xenograft model of Method section.
Experimental procedures	9	For each experimental group, including controls, describe the procedures in enough detail to allow others to replicate them, including: a. What was done, how it was done and what was used. b. When and how often. c. Where (including detail of any acclimatisation periods). d. Why (provide rationale for procedures).	Experimental procedures are detailed in the Method section.
Results	10	For each experiment conducted, including independent replications, report: a. Summary/descriptive statistics for each experimental group, with a measure of variability where applicable (e.g. mean and SD, or median and range). b. If applicable, the effect size with a confidence interval.	For each experiment conducted, i ncluding independent replications, descriptive statistics (mean and SEM, median and range), confidence interval are detailed in the Results section, Figure legend, and Supplemental Tables.