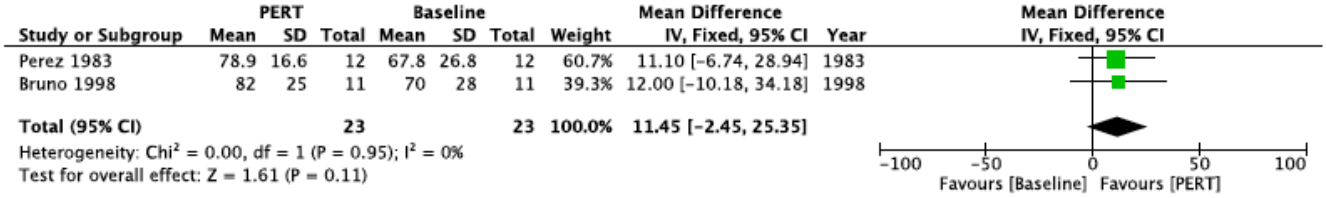
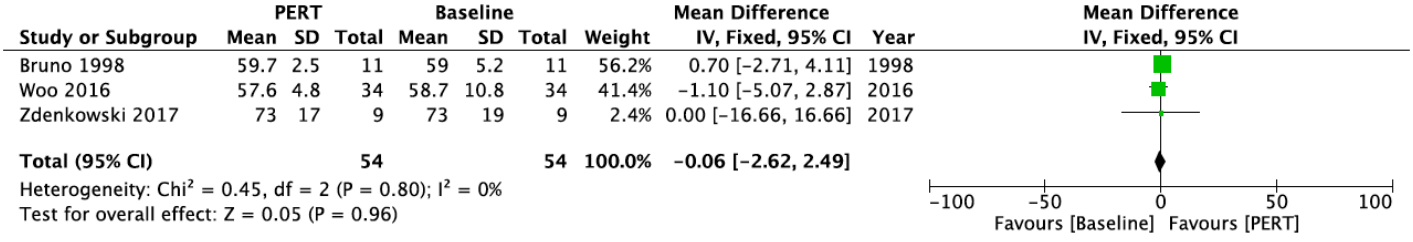
Supplementary Figure 1 A

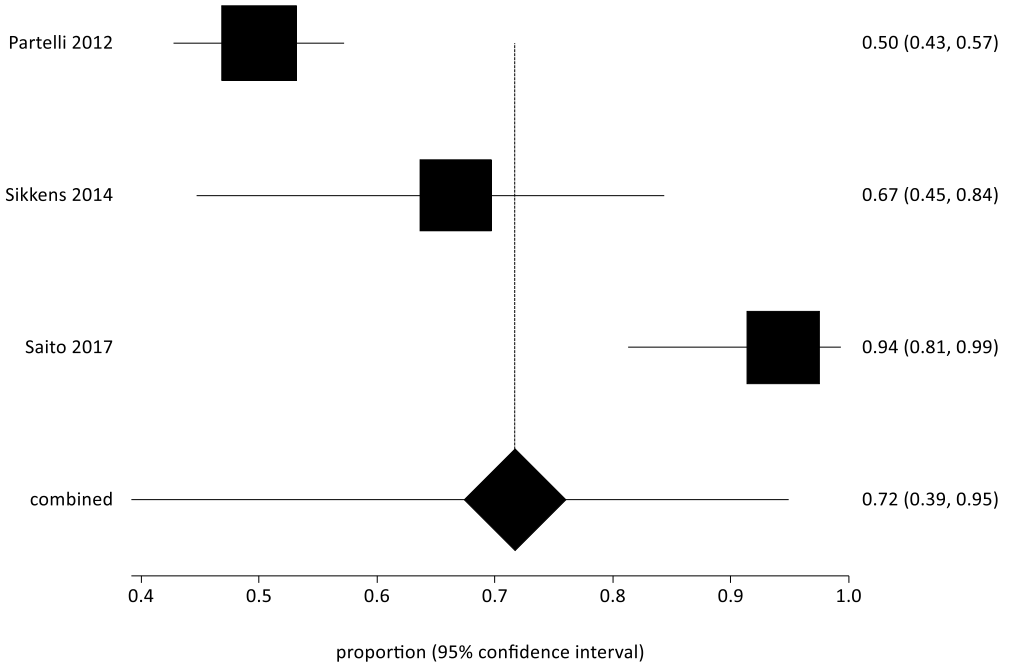


Supplementary Figure 1 B



Supplementary Figure 2

A



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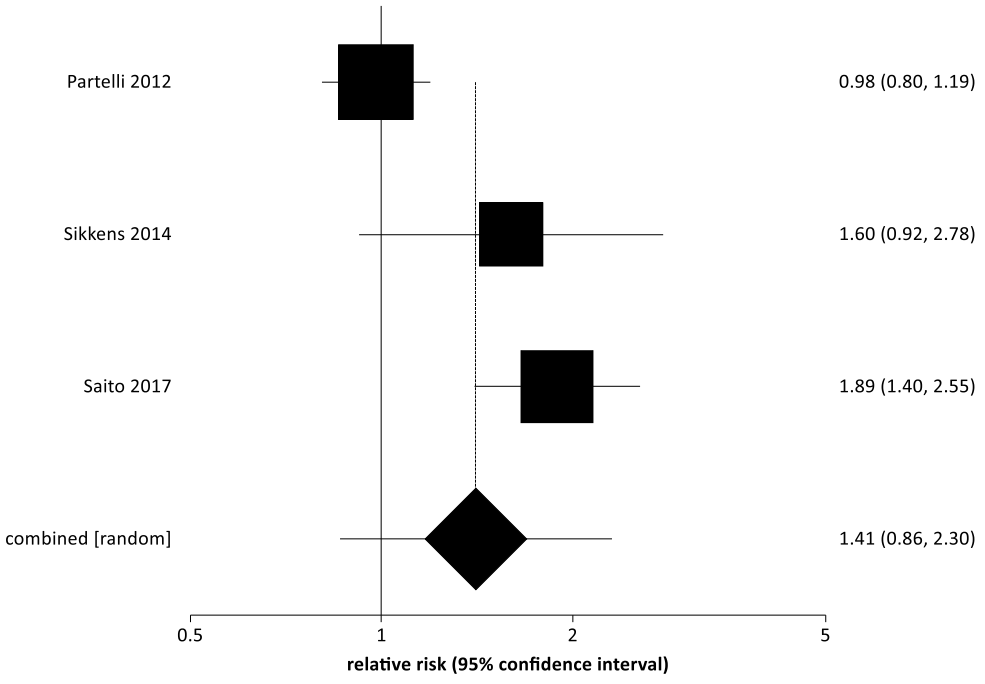

Supplementary Figure 3

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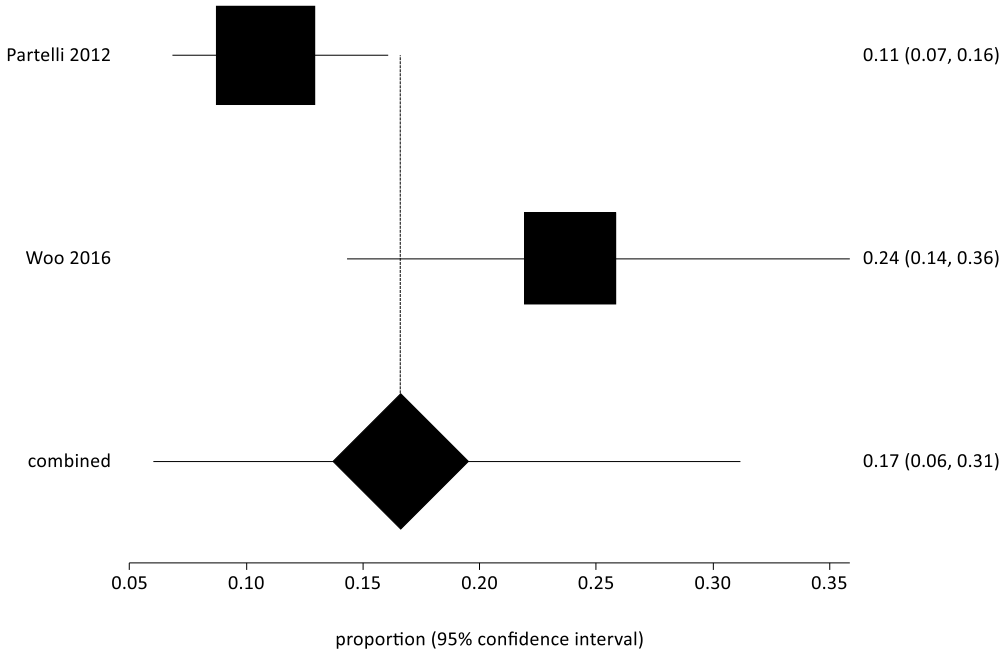

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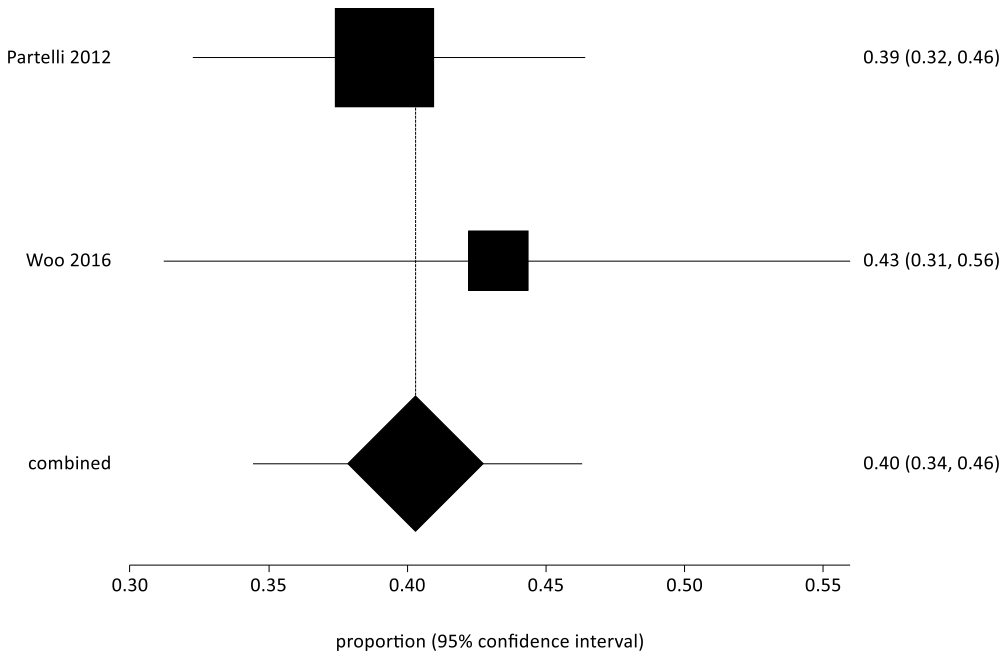

Supplementary Figure 4

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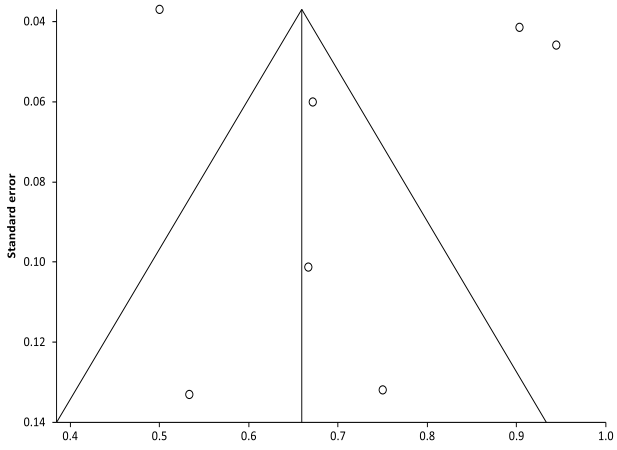

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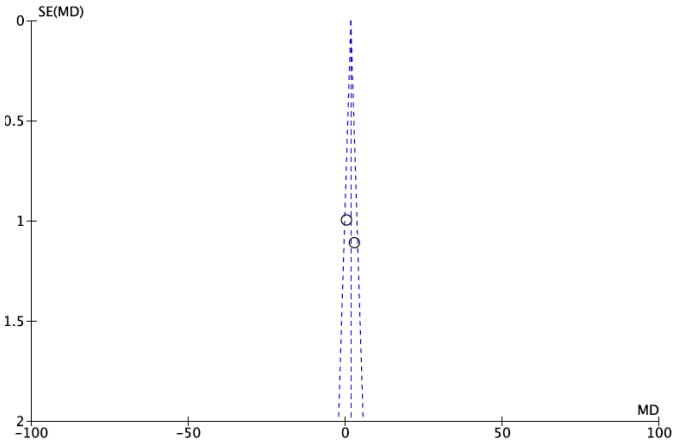

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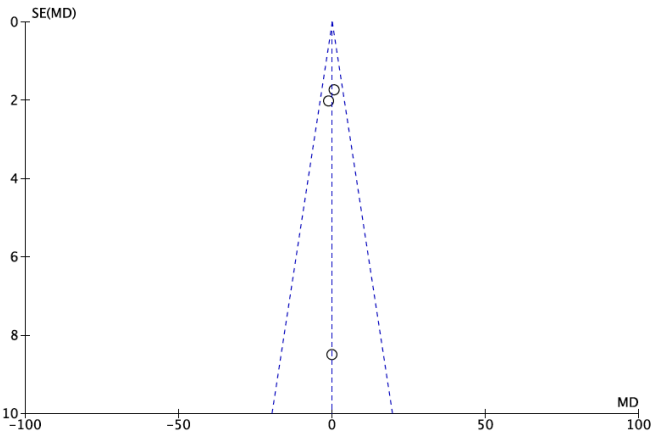

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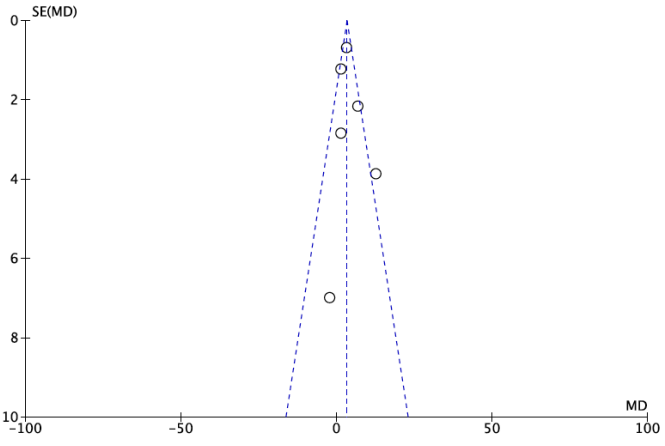

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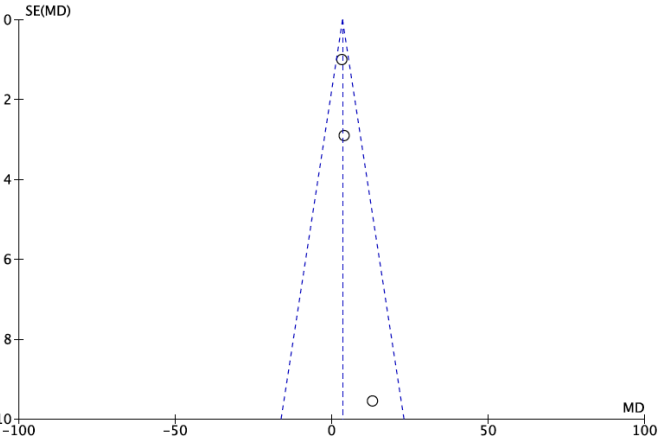
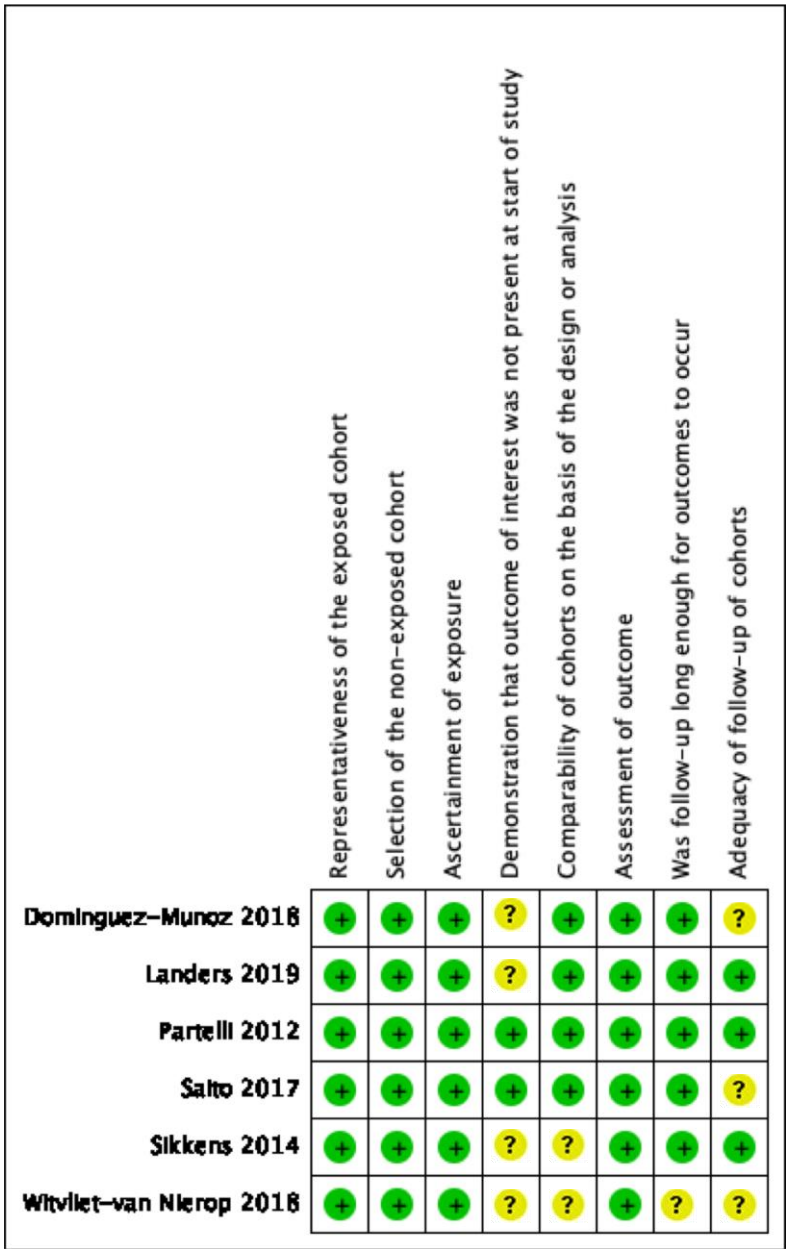
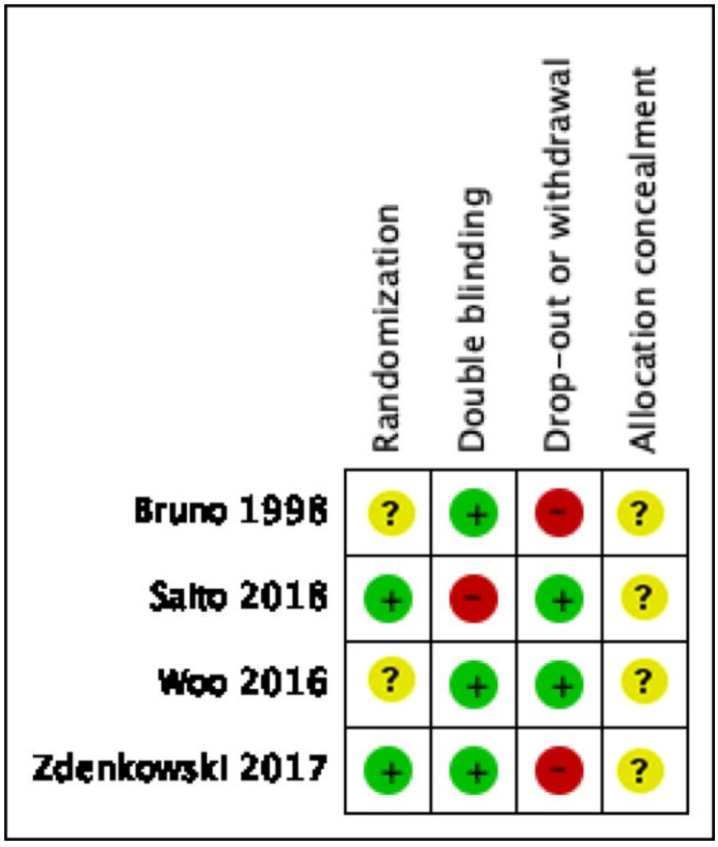


Supplementary Table 1A. Quality assessment of included cohort studies by the Newcastle-Ottawa scale



Risk of bias of included cohort studies. Risk of bias were assessed base on Newcastle-Ottawa Scale. Green dots indicate low risk of bias; yellow dots indicate unclear risk of bias and red dots indicate high risk of bias.

Supplementary Table 1B. Quality Assessment of Included Randomized Controlled Trials by the Jadad Score



Risk of bias of included randomized clinical trials. Risk of bias were assessed based on Jada scale. Green dots indicated low risk of bias (2 points in Jadad scale); yellow dots indicate unclear risk of bias (1 point in Jadad scale) and red dots indicate high risk of bias (0 point in Jadad scale)

Supplementary Table 2. Results of Subgroup Analyses

Subgroups	No. of studies	No. of patients	No. of PEI	Effect estimate	Heterogeneity	
				Pool prevalence, % (95% CI)	I^2 %	*P* value
High quality studies	7	410	265	72 (55-86)	90	< .0001
Sample size ≥ 30	4	359	232	77 (53-94)	95	< .0001
Western population	4	245	130	57 (46-67)	35	.198
Eastern population	3	165	135	85 (66-97)	87	.0004
RCT studies	2	129	101	79 (53-96)	91	< .0001

PEI, pancreatic exocrine insufficiency; CI, confidence interval; RCT; randomized control trial

Supplementary Table 3. Results of Sensitivity Analyses

Variables	No. of studies	No. of patients	No. of PEI	Effect estimate	Heterogeneity	
				Pool prevalence, % (95% CI)	I^2 %	*P* value
Studies used direct test for EPI	4	310	179	65 (50-79)	81	< .0013
Studies used indirect test for EPI	4	125	107	81 (64-94)	77	< .0051
Studies used only FE-1 test	3	285	158	60 (46-72)	72	.027

PEI, pancreatic exocrine insufficiency; CI, confidence interval; FE-1, fecal elastase-1.

Supplementary Table 4. Results of Meta-regression Analyses

	Pooled prevalence (95% CI), *P* value[a]						
	Year of publication	**Sex (men, %)**	**Age (year)**	**Population (Western)**	**Population > 30**	**Type of PEI test**	**Adjusted R-squared[b] (%)**
Univariate	0.003 (-0.022 to 0.028), 0.782	0.008 (-0.031 to 0.048), 0.598	0.044 (-0.001 to 0.09), 0.055	-0.286 (-0.549 to -0.023), 0.038	0.074 (-0.421 to 0.57), 0.716	0.297 (0.018 to 0.576), 0.041	
Multivariate[c]			0.022 (-0.001 to 0.045), 0.054	-0.139 (-0.309 to 0.031), 0.080		0.167 (0.008 to 0.324), 0.044	87

CI, confidence interval; PEI, pancreatic exocrine insufficiency.

[a]Two-sided *P* value.

[b]Proportion of variability between studies explained.

[C]Included covariates in the full model which have more influence in the heterogeneity.

Pubmed:
((pancreatic cancer[Title/Abstract]) OR (pancreatic neoplasm[Title/Abstract]) OR (carcinoma, pancreatic ductal [MeSH])) AND ((pancreatic function[Title/Abstract]) OR (exocrine pancreatic function[Title/Abstract]) OR (pancreatic insufficiency[MeSH Terms]) OR (exocrine pancreatic insufficiency[MeSH Terms]) OR (pancreas function[Title/Abstract]) OR (pancreas dysfunction[Title/Abstract]) OR (enzyme replacement therapy [MeSH Terms]) OR (Exocrine Pancreatic Insufficiency/drug therapy[MAJR]) OR (Enzyme Therapy[MAJR]))

Scopus:
(TITLE-ABS-KEY (pancreas PRE/3 cancer OR "pancreatic cancer" OR "pancreas neoplasm") AND TITLE-ABS-KEY ("exocrine pancreatic funct*" OR "exocrine insuffien*" OR "exocrine pancreatic insufficien*" OR "pancrea* insufficien*" OR "pancrea* funct*" OR "pancrea* dysfunct*" OR “enzyme replacement therap*”)) AND (LIMIT-TO(EXACTKEYWORD, “Human”))

Embase:
((pancreas adj3 cancer).ti,sh. or (pancreatic adj3 cancer).ab,ti,sh. or (pancreas adj3 neoplasm).ab,ti,sh.) and ((exocrine pancreatic function or exocrine pancreatic insufficiency).ab,ti,sh. or pancrea* insufficien*.ab,sh,ti. or pancrea* funct*.ab,ti,sh. or pancrea* dysfunct*.ab,ti,sh. or enzyme replacement therapy.ti,sh.) and human.sh.