

**Supplementary table1: Correlation of ESE3/EHF expression to clinicopathological features in PDAC.**

Parameters		ESE3(n)		$\chi^2$	<i>P</i>	<i>r</i>
		low	high			
<b>Age(years)</b>	<60	33	16	0.205	0.601	0.042
	≥60	30	14			
<b>Gender</b>	Male	35	12	0.106	0.435	0.032
	Female	36	10			
<b>Histological grade</b>	G1, G2	45	20	5.472	<b>0.020<sup>a</sup></b>	-0.324
	G3	25	3			
<b>p TNM stage</b>	IA, IB	33	19	3.276	<b>0.031<sup>a</sup></b>	-0.137
	IIA, IIB	28	13			
<b>Tumor size</b>	T1≤3.5cm	25	22	2.725	0.231	-0.456
	T2>3.5cm	30	16			
<b>LN metastasis</b>	N0	25	24	5.782	0.075	-0.443
	N1	30	14			

Note: Data was based on IHC assay. Statistical data on EHF expression in relation to clinic-histopathologic features for surgical PDAC specimens. *P* values were calculated using the chi-square test. <sup>a</sup> Statistically significant (*P*<0.05). <sup>b</sup> Here EHF expression was divided into high-EHF and low-EHF according to staining scores.

**Supplementary table2: Univariate and multivariate Cox proportional hazards analysis of clinicopathological factors for median overall survival and relapse free survival.**

Variables	Overall survival		Relapse free survival	
	HR (95.0% CI)	P	HR (95.0% CI)	P
<b>Univariate analysis</b>				
Age	0.989(0.631-1.550)	0.962	1.108(0.707-1.737)	0.655
Gender	0.934(0.606-1.438)	0.756	1.008(0.654-1.552)	0.973
Differentiation	0.762(0.451-1.287)	<b>0.031<sup>a</sup></b>	0.710(0.420-1.199)	<b>0.020<sup>a</sup></b>
Tumor size	1.582(1.007-2.487)	<b>0.046<sup>a</sup></b>	1.589(1.011-2.507)	<b>0.045<sup>a</sup></b>
p TNM stage	2.493(1.602-3.891)	<b>0.000<sup>a</sup></b>	2.439(1.550-3.830)	<b>0.000<sup>a</sup></b>
LN metastasis	0.862(0.505-1.472)	0.586	0.781(0.457-1.335)	0.366
EHF expression	0.253(0.156-0.409)	<b>0.000<sup>a</sup></b>	0.268(0.164-0.437)	<b>0.002<sup>a</sup></b>
<b>Multivariate analysis</b>				
Differentiation	0.571(0.332-0.982)	<b>0.043<sup>a</sup></b>	0.581(0.551-1.579)	<b>0.049<sup>a</sup></b>
p TNM stage	1.886(1.094-3.251)	<b>0.022<sup>a</sup></b>	2.099(1.209-3.645)	<b>0.008<sup>a</sup></b>
EHF expression	0.274(0.161-0.495)	<b>0.000<sup>a</sup></b>	0.303(0.180-0.509)	<b>0.000<sup>a</sup></b>

NOTE: Data was based on IHC assay. EHF staining score was determined by two independent pathologists who were blinded to the patients' clinical features and outcomes. Multivariate Cox proportional hazards analysis used backward selection model. Abbreviations: HR, hazard ratio; CI, confidence interval; LN, lymph node. <sup>a</sup> Statistically significant ( $P < 0.05$ ).

Supplementary table3: a list of drug library used for ESE3/EHF targeting screening

list of drug library										
	1	2	3	4	5	6	7	8	9	10
<b>A</b>	Vonoprazan	Peritoinin	Tomivosertib	Faropenem dioxate	Flavopiridol	Flavopiridol (Hydrochloride)	Senegacestat	Mitoquinone (mesylate)	Taranabant	Delapazolid
<b>B</b>	Nevaninibe hydrochloride	K-604 dihydrochloride	Linaprazan	BFH772	Odenacatib	Cadazolid	Treprostiniil	Paquimimod	AEE788	Plerixafor
<b>C</b>	Dihydroxidine (hydrochloride)	Velparib (dihydrochloride)	<b>Allopurinol riboside</b>	<b>Gestrinone</b>	<b>Ralfinamide</b>	<b>Rosiglitazone</b>	<b>Zanubrutinib</b>	<b>Ibuprofen piconol</b>	<b>AZD-5991</b>	<b>Linrodostat</b>
<b>D</b>	Ilaprazole	Aticaprant	GSK2982772	Ziritaxestat	EDO-S101	Danusertib	Dasatinib	Dasatinib (hydrochloride)	BMS-986142	Mirde-sap
<b>E</b>	Triflucicib hydrochloride	Nitromide	Fosfomycin	Ganciclovir	Doramectin	Capreomycin	Nafitine	Tegobuvir	Novobrocin	Daclatasvir
<b>F</b>	Niclosamide	Ronidazole	Ciclopirox	Sulfamerazine	Cloxacillin	Ivermectin	Ceftazidime	Moxidectin	Bekanamycin	Dihydrostreptomycin
<b>G</b>	Sertaconazole	Ciprofloxacin	Micafungin	Sulfathiazole	Vaganciclovir	Cefdinir	Tohafate	Tizoxanide	Radezolid	Chlortetracycline
<b>H</b>	Valacyclovir	Abidol	Troconazole	Butoconazole	Vancromycin	Isoniazid	Atazanavir	Mezocillin	Elvitegravir	Pipemidic acid
<b>I</b>	Chloroxine	Azocilin	ABT-333	Tobramycin	Ritonavir	Oxfendazole	Nafcilin	Cloquinoxol	Proflavine	Cinoxacin
<b>J</b>	Pentamidine	Sulbactam	Doripenem	Atovaquone	Be-sifloxacin	<b>Zanamvir</b>	<b>idoxuridine</b>	<b>Butenafine</b>	Ketoconazole	Moxifloxacin
<b>K</b>	Methacycline	Lopinavir	Ethambutol	Rientine	Norfloxacilin	Anidulafungin	Erythromycin	Osetamvir	<b>Roxithromycin</b>	<b>Saquinavir</b>
<b>L</b>	Sulfanilamide	Artemisinin	Oxacillin	Saquinavir	<b>Letemovir</b>	Levofloxacin	Cefpiramide	BAY57-1293	GS-7340	Dapivirine
<b>M</b>	Cidofovir	Fenbendazole	Bifonazole	Sulfadoxine	Boceprevir	Furagin	HygromycinB	Ceflitoren	Rimantadine	Salinomycin
<b>N</b>	Eprinomectin	(S)-Tedizolid	Darunavir	Succinylsulfathiazole	Bla-penem	Ribostamycin	Cefamandole	HIV-1 integrase inhibitor	Abacavir	Ceftazoxime
<b>O</b>	Cefetamet pivoxil	Cephalothin	Clofoctol	CDK9-IN-1	Actinomycin D	PSI-6130	Acyclovir	Anprolimum	Cloziquine	GS-7340
<b>P</b>	Clarithromycin	Cefradine	Tolcofos-methyl	Diniconazole	Cefonidic	Lumefantrine	Chloroxylenol	Ceftriaxone	Permethrin	tamoxifen
<b>Q</b>	Betulinaldehyde	Kasugamycin	Paromomycin	Tazobactam	Vidarabine	Penicillin	Valnemulin	Amikacin	Itraconazole	metformin
<b>R</b>	Mino-cycineR	Ribavirin/Rilpivrin	Cefmetazole	Nifursiol	AZATHIAMYCN	Omidazole	Totrazunil	Amantadine	Pyrazinamide	Famciclovir
<b>S</b>	Demeclocycline	Limomin	Neomycin	Retapamulin	Naphthoquinone	Cefsulodin	Hexetidine	HIV-1 integrase inhibitor 2	Omidazole	Rufloxacin

**Supplementary table4: detailed information of two patients whose specimens were used for isolation of primary cancer cells.**

	Patient1#	Patient2#
Primary cell name	PDX1#	PDX2#
Gender	male	female
age	65	64
Date of admission	2016-03-23	2016-11-09
Date of operation	2016-04-06	2016-11-28
Date of recurrence	2016-12-05	2017-09-02
Date of death	2017-03-02	2017-12-05
Surgical option	pancreaticoduodenectomy	pancreaticoduodenectomy
Pathological diagnosis	PDAC	PDAC
Histologic grade	G2	G2
Tumor size	3.0cm	4.0cm
LN metastasis	yes	yes
Vessel invasion	yes	yes
Nerve invasion	yes	yes

**Supplementary table5: Genomic background of two primary cancer cells PDX1# and PDX2#.**

Sample	Gene name	Spliced variant	Function	Mutation type	AA change
PDX1#	KRAS	NM_004985,NM_03336 0	exonic	missense SNV	KRAS:NM_004985:exon2:c.G35C:p.G12A,KRAS:NM_033360:exon2:c.G35C:p.G12A
	TP53	NM_000546,NM_001126112,NM_001126113,NM_001126114,NM_001126115,NM_001126116,NM_001126117,NM_001126118,NM_001276695,NM_001276696,NM_001276697,NM_001276698,NM_001276699,NM_001276760,NM_001276761	exonic	missense SNV	TP53:NM_001126115:exon3:c.G347A:p.R116Q,TP53:NM_001126116:exon3:c.G347A:p.R116Q,TP53:NM_001126117:exon3:c.G347A:p.R116Q,TP53:NM_001276697:exon3:c.G266A:p.R89Q,TP53:NM_001276698:exon3:c.G266A:p.R89Q,TP53:NM_001276699:exon3:c.G266A:p.R89Q,TP53:NM_001126118:exon6:c.G626A:p.R209Q,TP53:NM_000546:exon7:c.G743A:p.R248Q,TP53:NM_001126112:exon7:c.G743A:p.R248Q,TP53:NM_001126113:exon7:c.G743A:p.R248Q,TP53:NM_001126114:exon7:c.G743A:p.R248Q,TP53:NM_001276695:exon7:c.G626A:p.R209Q,TP53:NM_001276696:exon7:c.G626A:p.R209Q,TP53:NM_001276760:exon7:c.G626A:p.R209Q,TP53:NM_001276761:exon7:c.G626A:p.R209Q
	SMAD4	NM_005359	Intronic mutation		
	P16	No mutation was found			
PDX2#	KRAS	NM_004985,NM_03336 0	exonic	missense SNV	KRAS:NM_004985:exon2:c.G35A:p.G12D,KRAS:NM_033360:exon2:c.G35A:p.G12D
	TP53	NM_000546,NM_001126112,NM_001126115,NM_001126118,NM_001276697,NM_001276760,NM_001276761	exonic	missense SNV	TP53:NM_001126115:exon6:c.G683C:p.G228A,TP53:NM_001276697:exon6:c.G602C:p.G201A,TP53:NM_001126118:exon9:c.G962C:p.G321A,TP53:NM_000546:exon10:c.G1079C:p.G360A,TP53:NM_001126112:exon10:c.G1079C:p.G360A,TP53:NM_001276760:exon10:c.G962C:p

					.G321A,TP53:NM_001276761: exon10:c.G962C:p.G321A
	TP53	NM_000546,NM_00112 6112,NM_001126113,N M_001126114,NM_0011 26115,NM_001126116, NM_001126117,NM_00 1126118,NM_00127669 5,NM_001276696,NM_ 001276697,NM_001276 698,NM_001276699,N M_001276760,NM_001 276761	exonic	stopgain	TP53:NM_001126115:exon2:c. C241T:p.R81X,TP53:NM_0011 26116:exon2:c.C241T:p.R81X,T P53:NM_001126117:exon2:c.C 241T:p.R81X,TP53:NM_001276 697:exon2:c.C160T:p.R54X,TP 53:NM_001276698:exon2:c.C1 60T:p.R54X,TP53:NM_0012766 99:exon2:c.C160T:p.R54X,TP5 3:NM_001126118:exon5:c.C52 0T:p.R174X,TP53:NM_000546: exon6:c.C637T:p.R213X,TP53: NM_001126112:exon6:c.C637T: p.R213X,TP53:NM_001126113: exon6:c.C637T:p.R213X,TP53: NM_001126114:exon6:c.C637T: p.R213X,TP53:NM_001276695 :exon6:c.C520T:p.R174X,TP53: NM_001276696:exon6:c.C520T :p.R174X,TP53:NM_00127676 0:exon6:c.C520T:p.R174X,TP5 3:NM_001276761:exon6:c.C52 0T:p.R174X
	SMAD4	NM_005359	exonic	stopgain	SMAD4:NM_005359:exon3:c.C 403T:p.R135X
	SMAD4	NM_005359	Intronic mutation		
	P16	No mutation was found			

**Supplementary table6: shRNA sequences for stable knockdown cell lines**

Human EHF shRNA1 (most efficient)	Top: ccggGCCAATTGTATCCCTTTCCAAC TCGAGTTGGAAAGGGATACAATTG GCtttt
	Bottom: aattaaaaGCCAATTGTATCCCTTTCCAAC TCGAGTTGGAAAGGGATACA ATTGGC
Human EHF shRNA2	Top: ccggGGGAGTTCATCCGAGACATTCTCGAGGAATGTCTCGGATGAACT CCCtttt
	Bottom: aattaaaaGGGAGTTCATCCGAGACATTCTCGAGGAATGTCTCGGATG AACTCCC
Human EHF shRNA2	Top: ccggAGTCCGCACACAATGTCATTGCTCGAGCAATGACATTGTGTGCGG ACtttt
	Bottom: aattaaaaAGTCCGCACACAATGTCATTGCTCGAGCAATGACATTGTGTG CGGAC
Human CXCR4 shRNA1	Top ccggCCATCATCTTCTTAACTGGCAtttt
	Bottom aattaaaaCCATCATCTTCTTAACTGGCA
Human CXCR4 shRNA2 (most efficient)	Top ccggCCTGCTATTGCATTATCATCTtttt
	Bottom aattaaaaCCTGCTATTGCATTATCATCT
Human CXCR4 shRNA 3	Top ccggGGAGAGTTGTAGGATTCTACA tttt
	Bottom aattaaaaGGAGAGTTGTAGGATTCTACA

**Supplementary table 7: Primers used for genotyping of KPC mice model**

<b>Primer name</b>	<b>Sequence(5'-3')</b>
Trp53-primer1	CTT GGA GAC ATA GCC ACA CTG
Trp53-primer2	AGC TAG CCA CCA TGG CTT GAG TAA GT
Trp53-primer3	CAA CTG TTC TAC CTC AAG AGC C
Kras-primer1	GTC TTT CCC CAG CAC AGT GC
Kras-primer2	CTC TTG CCT ACG CCA CCA GCT C
Kras-primer3	AGC TAG CCA CCA TGG CTT GAG TAA GTC TGC A
Pdx1-Cre-internal positive control forward	AGA TGG AGA AAG GAC TAG GCT ACA
Pdx1-Cre-internal positive control reverse	CTG TCC CTG TAT GCC TCT GG
Pdx1-Cre-transgene forward	CCT GGA CTA CAT CTT GAG TTG C
Pdx1-Cre-transgene reverse	AGG CAA ATT TTG GTG TAC GG



**Supplementary table8: PCR procedure for genotyping of KPC mice model**

Trp53	Step1: 94°C 3min; Step2: 94°C 1min, 60°C 30s, 72°C 30s (34 repeats for step2); Step3: 72°C 5min; End.
Kras	Step1: 94°C 5min; Step2: 94°C 30s, 61°C 30s, 72°C 30s (34 repeats for step2); Step3: 72°C 10min; End.
Pdx1-Cre	Step1: 94°C 3min; Step2: 94°C 30s, 65°C 1min(-0.5°C per cycle decrease), 68°C 30s (10 repeats for step2); Step3: 94°C 30s; Step4: 94°C 30s, 60°C 1min, 72°C 30s (28 repeats for step4); Step5: 72°C 5min; End.

**Supplementary table9: Antibodies used in this study**

<b>Antibodies name</b>	<b>Dilution</b>	<b>Source</b>	<b>Cat #</b>
Anti-human EHF antibody (for WB)	1:5000	LSBio	LS-B11884
Anti-human EHF antibody (for IHC and Ch-IP)	1:1000	abcam	ab220113
Anti-human Sox9 antibody (for WB and IHC)	1:1000	abcam	ab185230
Anti-human Sox2 antibody (for WB and IHC)	1:1000	Proteintech	66411-1-Ig
Anti-human Nanog antibody (for WB and IHC)	1:1000	abcam	ab109250
Anti-human Oct4 antibody (for WB and IHC)	1:1000	abcam	ab18976
Anti-human CXCR4 antibody (for WB and IHC)	1:1000	abcam	ab124824
Anti-human CD133 antibody (for mIHC)	1:100	Miltenyi Biotec	130-118-143
Anti-human tubulin antibody (for WB)	1:5000	abmart	M20005
Anti-human ALDH1 antibody (for mIHC)	1:1000	BD	611194
Anti-human PPAR $\gamma$ antibody (for Ch-IP)	1:10	abcam	ab45036
Anti-human carbonic anhydrase2 antibody (for WB)	1:1000	abcam	ab124687
Anti-human CK19 antibody (for WB)	1:1000	abcam	ab7755
Anti-human E-cadherin antibody (for WB)	1:1000	abcam	ab1416
PE/Cy7 anti-human EpCAM antibody (for FCM)	5 $\mu$ l/test	Biolegend	324222
FITC anti-human CD24 antibody (for FCM)	5 $\mu$ l/test	Biolegend	101805
PE anti-human CD24 antibody (for FCM)	5 $\mu$ l/test	Biolegend	311106
APC anti-human CD44 antibody (for FCM)	5 $\mu$ l/test	Biolegend	338806
APC/Cy7 anti-human CXCR4 antibody (for FCM)	5 $\mu$ l/test	Biolegend	306528
PE anti-human CD133 antibody (for FCM)	5 $\mu$ l/test	Biolegend	372804
Anti-human IL6 antibody (for neutralizing)	5 $\mu$ g/ml	R&D	MAB206

Anti-human IL8 antibody (for neutralizing)	5µg/ml	R&D	MAB208
Anti-human GRO antibody (for neutralizing)	5µg/ml	R&D	AF275
Anti-human CSF2 antibody (for neutralizing)	5µg/ml	R&D	MAB215
Anti-human MCP1 antibody (for neutralizing)	5µg/ml	R&D	MAB279
Anti-human PDGF antibody (for neutralizing)	5µg/ml	R&D	AF-220-NA
Anti-human CXCL12/SDF-1 antibody (for neutralizing)	5µg/ml	R&D	MAB310
Anti-human activin-A antibody (for neutralizing)	5µg/ml	R&D	AF338
Anti-human periostin antibody (for neutralizing)	5µg/ml	R&D	MAB35483
Anti-human CTGF antibody (for neutralizing)	5µg/ml	Fibrogen	FG-3019
Anti-human endothelin antibody (for neutralizing)	5µg/ml	R&D	MAB34401
Mouse IgG1 isotype control (for matching with anti-IL6, anti-IL8, anti-CXCL12, anti-CSF-2, anti-MCP1, anti-periostin, anti-CTGF and anti-endothelin)	5µg/ml	R&D	MAB002
Polyclonal Goat IgG isotype control (for matching with anti-GRO, anti-PDGF, anti-activin-A)	5µg/ml	R&D	AB-108-C

**Supplementary table10: Primers used for RT-PCR and Ch-IP in this study**

Gene name	Forward	Reverse
<b>h EHF</b>	TGCAGCATCTGAAGTGGA AC	AGGAAGGTGACTGGTGGTTG
<b>hSox9</b>	GCTCTGGAGACTTCTGAA CGA	CCGTTCTTCACCGACTTCCT
<b>hSox2</b>	ACACCAATCCCATCCACAC T	GCAAACCTTCTGCAAAGCTC
<b>h Nanog</b>	TTCCTTCTCCATGGATCT G	ATCTGCTGGAGGCTGAGGTA
<b>hOct4</b>	GAAGGATGTGGTCCGAGT GT	GTGAAGTGAGGGCTCCCATA
<b>hCXCR4</b>	GAACCCTGTTTCCGTGAA GA	AGGGAAGCGTGATGACAAAG
<b>hCXCR7</b>	CAAAACAGGGCTCACCAA GC	GCCGGTACAAAACACCACAC
<b>h Actin</b>	ACCCTGAAGTACCCATC GAG	AGCACAGCCTGGATAGCAAC
<b>EHFCh-IP-Sox9-1</b>	AGAGCCCTGGATACGAAG	TCCCAAATAAACGCACAG
<b>EHFCh-IP-Sox9-2</b>	GCCGATTCACCACAACAA	GCACCACCGCAGACAAAA
<b>EHFCh-IP-Sox2-1</b>	GCGTGGGAGGGAGTTTGT	AGAAGGGTTTCGGTCGTG
<b>EHFCh-IP-Nanog-1</b>	CCCCTTAACAAACTGTGC	TCCTTCTATTCCCAAAC
<b>EHFCh-IP-Nanog-2</b>	TTGAATGTTGGGTTTGGG	TAGGGTGATTTCTTGATTTGA G
<b>EHFCh-IP-Oct4-1</b>	GCATTCCGTTGGCTATTC	GGGCAGCTCTAACCCATAA
<b>EHFCh-IP-CXCR4-1</b>	GGGATGTCTTGAGCGAG TT	CCCTCTGCCTACTGTGCTG
<b>PPAR <math>\gamma</math> Ch-IP-EHF-1</b>	GGTTAATCTCAGGCAATG	AGACAAATCAGGCACAAC
<b>PPAR <math>\gamma</math> Ch-IP-EHF-2</b>	ACAGTCACCACCAAATCA	TAAGCAATAAGCCACCAA

**Supplementary table11: Sequence of the vectors for luciferase analysis**

CXCR4 promoter-EBS1-wt (yellow region stands for EBS1-wt sequence)
<p>tccccaccccgcttctccctccccgcccagcggcgcatgcgccgcgctcggagcgtgttttataaaagt  ccggccgcccagaaacttcagtttgttggtgctgcccagcaggtagcaaagtgacgccgagggcctgagtgc  tccagtagccaccgcatctggagaaccagcggttaccatggaggggatcagtgtaagtccagtttcaacctgc  tttgcataaatgtacaaacgtttgaacttagagcgcagcccctctccgagcgggcagaagcggccaggacat  tggaggtaccgtactccaaaaagggtcaccgaaaggagttttcttgaccatgcctatatagtgccgggtggg  tggggggggagcaggattggaatcttttctctgtgagtcgaggagaaacgactggaaagagcgttccagtg  ctgcatgtgtctcccccttgagtcgccgcgcgccggcgttgacgctgtttgcaaactgaagaacattct  gtgcacaagtgcagagaaggcgtgcccgtgctcgggactcagaccaccggtctcttccttggggaagcggg  gatgtcttggagcagttacattgtctgaatttagaggcggagggcggtgctgctgggctgagttccaggag  gagattgccccgcttt<b>aacttcggggtt</b>aagcgcctggtgactgttcttgacactgggtgctgtttgttaa  actctgtgcccgcagcggagctgtgcccagtcctccagcacagtaggcagagggcgggagaggcgggtggacc  accgcccgatcctctgaggggatcagtggtggcagcagctaggagttgatccgccgcgctttgggtt  gagggggaaaccttcccgcgtccgaagcgcctcttccccacggccgcagtgggctcctgcagttcgaga  gtttggggtcgtgcagaggtcagcggagtggttgacctcccccttgacaccgcgagctgcagccctgaga  tttgcgctccgggataggagcgggtacgggtgagggcgggggcggttaagaccgcacctgggctccagg  tcgcccgcgaagactggcaggtgcaagtgggaaaccgtttggctctctccgagtcagttgtgatgttta  accgtcgggtggtttccagaaacctttgaaacctcttgctagggagttttggtttctgcagcggcgca  attcaaagacgctcggcgagcggccagtcgctccccagcaccctgtgggacagagcctggcgtgcgcc  cagcggagcccctgcagcgtgcttgcccggcgttggtgtagtgggcagccgcccggccggggct  ggacgaccggcccccgctgcccaccgctggaggcttccagctgcccacctccggcgggtaactggat  cagtgccgggtaattgggaagccaccgggagagtgaggaaatgaaactggggcaggaccaggggtcaga  ccccgttaccttccaccaggaaaatgcccgcctcctaactccaaacgcgccaagtataaacacgag  gatggcaagagaccacacacgggagcgccttgggggaggaggtgcccgtttgttattttctgacac  tcccgcccaatatacccaagcaccgaaggccttctgttttaagaccgattctctttaccactacaagt  tgcttgaagcccagaatggttgtatttaggcaggcgtgggaaaattaagttttgctttaggagaatgag  tctttgcaacgccccgcccctccccgtgatcctccttctcccctcttccctccctggggcaaaaactct  tcaaaaaagttaatcactgcccctctagcagaccaccacccccaccccgccctgggagtgccctctt  gtgtgtatttttttttctcctaaggaagg</p>
CXCR4 promoter-EBS1-mut (yellow region stands for EBS1-mut sequence)
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