

Supplementary

Table S1 Genetic testing using primer sequences

Gene	Primer	Sequence (5'-3')	PCR products
β-actin	Forward	<i>CACGATGGAGGGGCCGACTCATC</i>	240bp
	Reverse	<i>TAAAGACCTCTATGCCAACACAGT</i>	
Cavia porcellus NK1R	Forward	<i>CTGCGGTCTTTGCCAGTATC</i>	171bp
	Reverse	<i>TGGTTGAGTAGTAGCCCTGC</i>	
Cavia porcellus TRPV1	Forward	<i>CAGTGGGAAGATTGGGGTCT</i>	207bp
	Reverse	<i>TCATGGCGATTAGGGGTCTC</i>	
Cavia porcellus SP	Forward	<i>CGGAGGAAAACACAGCCATT</i>	240bp
	Reverse	<i>ACTCACAGATGGTCAGTCGG</i>	
Cavia porcellus CGRP	Forward	<i>CGAAGGACTCTAGCTCACCG</i>	193bp
	Reverse	<i>CCAGGTCTAGGCTGTTGTCT</i>	

Table S2 Comparison of cough in each group

Test details	Mean 1 (times/6 min)	Mean 2(times/6 min)	P value
Sham vs. Model	2.5	15.67	<0.0001
Sham vs. EA + M	2.5	7.5	0.0002
Sham vs. H89 + M	2.5	9.167	<0.0001
Sham vs. Go6983 + M	2.5	9.5	<0.0001
Model vs. EA + M	15.67	7.5	<0.0001
Model vs. H89 + M	15.67	9.167	<0.0001
Model vs. Go6983 + M	15.67	9.5	<0.0001
EA + M vs. H89 + M	7.5	9.167	0.9383
EA + M vs. Go6983 + M	7.5	9.5	0.4693
H89 + M vs. Go6983 + M	9.167	9.5	>0.9999

Table S3 PGE2, BK, and TRPV1 protein expression in the bronchoalveolar lavage fluid and blood was determined by ELISA

Sample	Index	Test details	Mean 1	Mean 2	P Value		
BALF	PGE2 (pg/mL)	Sham vs. Model	73.3	105.7	0.0001		
		Sham vs. EA + M	73.3	85.23	0.584		
		Sham vs. H89 + M	73.3	82	>0.9999		
		Sham vs. Go6983 + M	73.3	82.89	>0.9999		
		Model vs. EA + M	105.7	85.23	0.0226		
		Model vs. H89 + M	105.7	82	0.0058		
		Model vs. Go6983 + M	105.7	82.89	0.0085		
		EA + M vs. H89 + M	85.23	82	>0.9999		
		EA + M vs. Go6983 + M	85.23	82.89	>0.9999		
		H89 + M vs. Go6983 + M	82	82.89	>0.9999		
		BK (ng/mL)	Sham vs. Model	1.265	1.368	0.0152	
			Sham vs. EA + M	1.265	1.225	>0.9999	
	Sham vs. H89 + M		1.265	1.208	0.6371		
	Sham vs. Go6983 + M		1.265	1.215	>0.9999		
	Model vs. EA + M		1.368	1.225	0.0005		
	Model vs. H89 + M		1.368	1.208	0.0001		
	Model vs. Go6983 + M		1.368	1.215	0.0002		
	EA + M vs. H89 + M		1.225	1.208	>0.9999		
	EA + M vs. Go6983 + M		1.225	1.215	>0.9999		
	H89 + M vs. Go6983 + M		1.208	1.215	>0.9999		
	TRPV 1 (ng/mL)		Sham vs. Model	0.6565	1.307	0.0009	
			Sham vs. EA + M	0.6565	0.6038	>0.9999	
		Sham vs. H89 + M	0.6565	0.626	>0.9999		
		Sham vs. Go6983 + M	0.6565	0.6113	>0.9999		
		Model vs. EA + M	1.307	0.6038	0.0003		
		Model vs. H89 + M	1.307	0.626	0.0005		
		Model vs. Go6983 + M	1.307	0.6113	0.0004		
		EA + M vs. H89 + M	0.6038	0.626	>0.9999		
		EA + M vs. Go6983 + M	0.6038	0.6113	>0.9999		
		H89 + M vs. Go6983 + M	0.626	0.6113	>0.9999		
		Blood	PGE2 (pg/mL)	Sham vs. Model	143.7	172.9	0.0098
				Sham vs. EA + M	143.7	137.9	>0.9999
	Sham vs. H89 + M			143.7	142.1	>0.9999	
	Sham vs. Go6983 + M			143.7	138	>0.9999	
	Model vs. EA + M			172.9	137.9	0.0014	
	Model vs. H89 + M			172.9	142.1	0.0058	
Model vs. Go6983 + M	172.9			138	0.0015		
EA + M vs. H89 + M	137.9			142.1	>0.9999		
EA + M vs. Go6983 + M	137.9			138	>0.9999		
H89 + M vs. Go6983 + M	142.1			138	>0.9999		
BK (ng/mL)	Sham vs. Model			10.28	21.64	0.0016	
	Sham vs. EA + M			10.28	13.06	0.8184	
	Sham vs. H89 + M		10.28	11.98	0.9639		
	Sham vs. Go6983 + M		10.28	11.82	0.9746		
	Model vs. EA + M		21.64	13.06	0.0213		
	Model vs. H89 + M		21.64	11.98	0.0079		
	Model vs. Go6983 + M		21.64	11.82	0.0068		
	EA + M vs. H89 + M		13.06	11.98	0.9933		
	EA + M vs. Go6983 + M		13.06	11.82	0.9887		
	H89 + M vs. Go6983 + M		11.98	11.82	>0.9999		
	TRPV 1 (ng/mL)		Sham vs. Model	1.445	2.91	<0.0001	
			Sham vs. EA + M	1.445	1.832	0.7439	
Sham vs. H89 + M			1.445	2.002	0.1286		
Sham vs. Go6983 + M			1.445	1.818	0.8481		
Model vs. EA + M			2.91	1.832	0.0002		
Model vs. H89 + M			2.91	2.002	0.0019		
Model vs. Go6983 + M			2.91	1.818	0.0002		
EA + M vs. H89 + M			1.832	2.002	>0.9999		
EA + M vs. Go6983 + M			1.832	1.818	>0.9999		
H89 + M vs. Go6983 + M			2.002	1.818	>0.9999		

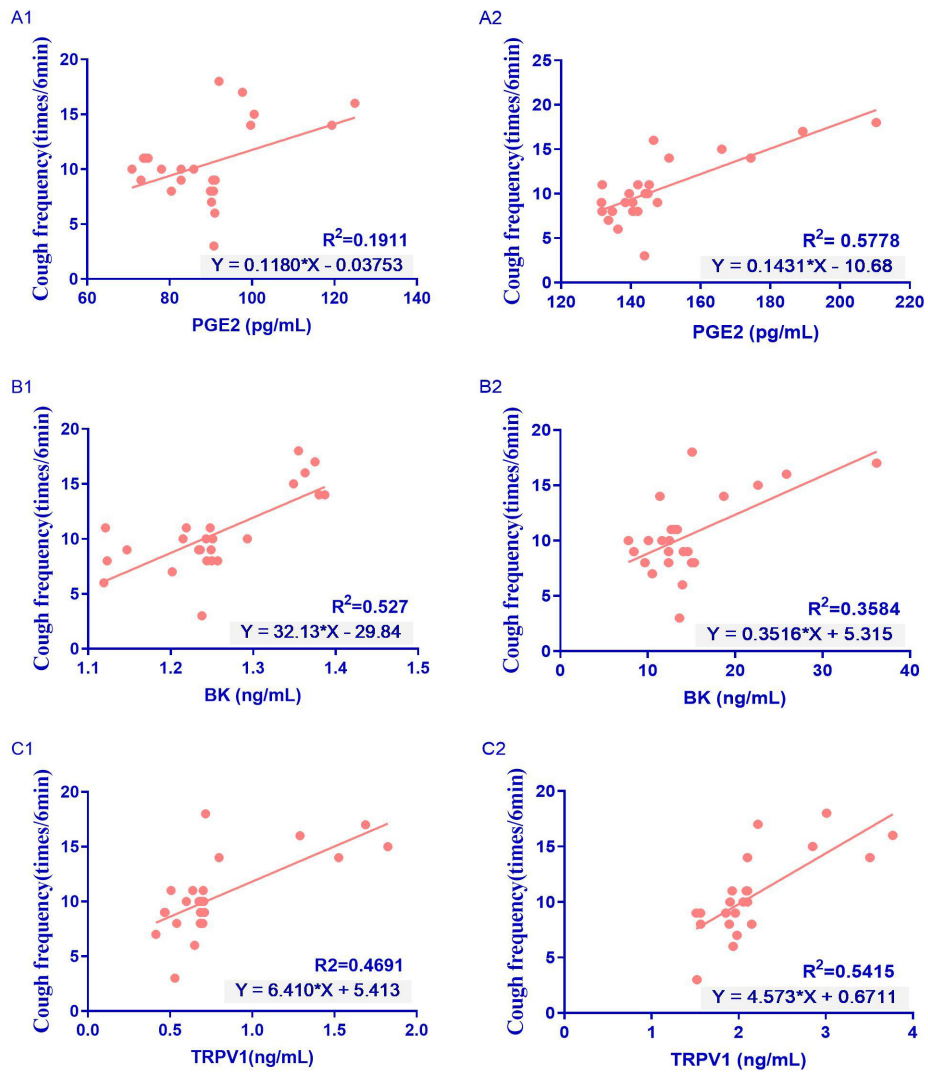


Figure S1 Correlation analysis of postoperative chronic cough in guinea pigs with the expression of PGE2, BK, TRPV1 in alveolar lavage fluid and blood.

Table S4 Western blot Quantitative analysis of p-PKA, p-PKC, and p-TRPV1 protein expression in guinea-pig lung tissues

Index	Test details	Mean 1	Mean 2	P value
p-PKA	Sham vs. Model	0.6525	0.8552	0.0015
	Sham vs. EA + M	0.6525	0.522	0.0817
	Sham vs. H89 + M	0.6525	0.3512	<0.0001
	Sham vs. Go 6983 + M	0.6525	0.8118	0.0173
	Model vs. EA + M	0.8552	0.522	<0.0001
	Model vs. H89 + M	0.8552	0.3512	<0.0001
	Model vs. Go 6983 + M	0.8552	0.8118	>0.9999
	EA + M vs. H89 + M	0.522	0.3512	0.0091
	EA + M vs. Go 6983 + M	0.522	0.8118	<0.0001
	H89 + M vs. Go 6983 + M	0.3512	0.8118	<0.0001
p-PKC	Sham vs. Model	0.5087	0.7743	<0.0001
	Sham vs. EA + M	0.5087	0.5087	>0.9999
	Sham vs. H89 + M	0.5087	0.7905	<0.0001
	Sham vs. Go 6983 + M	0.5087	0.3387	0.0158
	Model vs. EA + M	0.7743	0.5087	<0.0001
	Model vs. H89 + M	0.7743	0.7905	>0.9999
	Model vs. Go 6983 + M	0.7743	0.3387	<0.0001
	EA + M vs. H89 + M	0.5087	0.7905	<0.0001
	EA + M vs. Go 6983 + M	0.5087	0.3387	0.0158
	H89 + M vs. Go 6983 + M	0.7905	0.3387	<0.0001
p-TRPV 1	Sham vs. Model	0.7482	0.9845	0.0082
	Sham vs. EA + M	0.7482	0.5412	0.0269
	Sham vs. H89 + M	0.7482	0.5395	0.0252
	Sham vs. Go 6983 + M	0.7482	0.5335	0.0198
	Model vs. EA + M	0.9845	0.5412	<0.0001
	Model vs. H89 + M	0.9845	0.5395	<0.0001
	Model vs. Go 6983 + M	0.9845	0.5335	<0.0001
	EA + M vs. H89 + M	0.5412	0.5395	>0.9999
	EA + M vs. Go 6983 + M	0.5412	0.5335	>0.9999
	H89 + M vs. Go 6983 + M	0.5395	0.5335	>0.9999

Table S5 TRPV1, SP, CGRP, and NK1R mRNA content were measured in guinea pig lung tissue by quantitative real-time lung PCR analysis

Index	Test details	Mean 1	Mean 2	P Value
TRPV1 mRNA	Sham vs. Model	1.403	2.265	0.0113
	Sham vs. EA + M	1.403	1.463	>0.9999
	Sham vs. H89 + M	1.403	0.9627	0.0275
	Sham vs. Go 6983 + M	1.403	0.577	0.0176
	Model vs. EA + M	2.265	1.463	0.0055
	Model vs. H89 + M	2.265	0.9627	0.0004
	Model vs. Go 6983 + M	2.265	0.577	0.0001
	EA + M vs. H89 + M	1.463	0.9627	0.1583
	EA + M vs. Go 6983 + M	1.463	0.577	0.016
	H89 + M vs. Go 6983 + M	0.9627	0.577	0.6182
SP mRNA	Sham vs. Model	1.419	2.291	0.0029
	Sham vs. EA + M	1.419	1.096	>0.9999
	Sham vs. H89 + M	1.419	0.812	0.0708
	Sham vs. Go 6983 + M	1.419	0.5108	0.0018
	Model vs. EA + M	2.291	1.096	<0.0001
	Model vs. H89 + M	2.291	0.812	<0.0001
	Model vs. Go 6983 + M	2.291	0.5108	<0.0001
	EA + M vs. H89 + M	1.096	0.812	>0.9999
	EA + M vs. Go 6983 + M	1.096	0.5108	0.091
	H89 + M vs. Go 6983 + M	0.812	0.5108	>0.9999
CGRP mRNA	Sham vs. Model	1.131	2.387	<0.0001
	Sham vs. EA + M	1.131	1.381	0.8325
	Sham vs. H89 + M	1.131	0.9162	>0.9999
	Sham vs. Go 6983 + M	1.131	0.7692	0.1535
	Model vs. EA + M	2.387	1.381	<0.0001
	Model vs. H89 + M	2.387	0.9162	<0.0001
	Model vs. Go 6983 + M	2.387	0.7692	<0.0001
	EA + M vs. H89 + M	1.381	0.9162	0.0258
	EA + M vs. Go 6983 + M	1.381	0.7692	0.0017
	H89 + M vs. Go 6983 + M	0.9162	0.7692	>0.9999
NK1R mRNA	Sham vs. Model	1.183	1.745	0.0238
	Sham vs. EA + M	1.183	0.873	0.4225
	Sham vs. H89 + M	1.183	0.8997	0.7732
	Sham vs. Go 6983 + M	1.183	0.5525	0.0013
	Model vs. EA + M	1.745	0.873	0.0049
	Model vs. H89 + M	1.745	0.8997	0.03
	Model vs. Go 6983 + M	1.745	0.5525	0.0002
	EA + M vs. H89 + M	0.873	0.8997	>0.9999
	EA + M vs. Go 6983 + M	0.873	0.5525	0.1909
	H89 + M vs. Go 6983 + M	0.8997	0.5525	0.7072