

SEQUENCE LISTING

<110> ENGINE, INC.

<120> LOCALIZED EXPRESSION OF IL-12 ALONE OR IN COMBINATION WITH
TYPE-I IFN INDUCERS FOR TREATMENT OF MUCOSAL CANCERS

<130> PAT 108261W-90

<140> PCT/IB2020/000178

<141> 2020-03-13

<150> 62/924,131

<151> 2019-10-21

<150> 62/923,403

<151> 2019-10-18

<150> 62/818,425

<151> 2019-03-14

<160> 10

<170> PatentIn version 3.5

<210> 1

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<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
peptide

<220>

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<210> 2

<211> 18

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
peptide

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Lys Gly

<210> 3
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 3
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<210> 4
<211> 15
<212> PRT
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 4
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<210> 5
<211> 1611
<212> DNA
<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic polynucleotide

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120

gccccgggg aaatggtggt gtcacttgt gatactcccg aagaggatgg aattacctgg
180

accctcgatc agtcctccga ggtcttggga tccggcaaaa ctctgaccat ccaagtcaag
240

gaattcggcg acgcggggca gtacacctgt cacaagggcg gagaagtgtg gtcgcactca
300

ctcctgctcc ttcacaaaaa ggaggacggc atctggtcga ccgacatcct gaaggaccag
360

aaggaaccca agaacaagac ctttctgcgc tgcgaggcca agaactattc gggaagggtc
420

acctgttggt ggctgactac catctccacc gacctgactt tctccgtgaa gtcctctcgg
480

ggttcgagcg acccgagggg tgttacgtgc ggtgctgcaa ccctgtccgc ggagagagtg
540

cggggggaca acaaggaata cgagtactca gtggaatgcc aggaagatag cgctgcctt
600

gccgccgaag agtccctgcc gattgaagtc atggtggacg cagtgcataa gttgaaatat
660

gagaactaca cctcgtcgtt cttcatccgg gacatcatca agcctgaccc ccctaagaat
720

ctgcagctca agcccctcaa gaactccaga caggtcgaag tgtcctggga gtaccagat
780

acgtggagca caccgcactc gtacttctcc ttgaccttct gcgtccaagt gcagggaaag
840

tccaaacggg agaagaagga ccgctgttcc actgataaga cttccgctac tgtgatctgc
900

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960

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1020

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1080

cttctgaggg ctgtgtccaa catgctgcag aaggctcggc agaccctgga attctacccc
1140

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1200

gcctgcctgc ccctggaact gaccaagaac gaatcgtgcc tgaatagccg ggaaacctcc
1260

ttcatcacca acggctcctg cctggcctca cgaaagacca gctttatgat ggcctgtgc
1320

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1380

aagctgctga tggatccgaa gcggcagatc ttcttggacc agaatatgct ggcagtgatc
1440

gacgagctga tgcaggccct caacttcaac tccgagactg tgccgcaaaa gtcgagcctg
1500

gaggaaccgg acttctacaa gaccaagatc aagttatgta ttctcctgca cgcgttttagg
1560

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<210> 6

<211> 536

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic
polypeptide

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Val	Glu	Leu	Asp	Trp	Tyr	Pro	Asp	Ala	Pro	Gly	Glu	Met	Val	Val	Leu
		35					40					45			

Thr	Cys	Asp	Thr	Pro	Glu	Glu	Asp	Gly	Ile	Thr	Trp	Thr	Leu	Asp	Gln
	50						55				60				

Ser	Ser	Glu	Val	Leu	Gly	Ser	Gly	Lys	Thr	Leu	Thr	Ile	Gln	Val	Lys
65					70					75					80

Glu	Phe	Gly	Asp	Ala	Gly	Gln	Tyr	Thr	Cys	His	Lys	Gly	Gly	Glu	Val
				85					90					95	

Leu	Ser	His	Ser	Leu	Leu	Leu	Leu	His	Lys	Lys	Glu	Asp	Gly	Ile	Trp
			100					105					110		

Ser	Thr	Asp	Ile	Leu	Lys	Asp	Gln	Lys	Glu	Pro	Lys	Asn	Lys	Thr	Phe
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Leu	Arg	Cys	Glu	Ala	Lys	Asn	Tyr	Ser	Gly	Arg	Phe	Thr	Cys	Trp	Trp
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Leu	Thr	Thr	Ile	Ser	Thr	Asp	Leu	Thr	Phe	Ser	Val	Lys	Ser	Ser	Arg
145					150					155					160

Gly Ser Ser Asp Pro Gln Gly Val Thr Cys Gly Ala Ala Thr Leu Ser
165 170 175

Ala Glu Arg Val Arg Gly Asp Asn Lys Glu Tyr Glu Tyr Ser Val Glu
180 185 190

Cys Gln Glu Asp Ser Ala Cys Pro Ala Ala Glu Glu Ser Leu Pro Ile
195 200 205

Glu Val Met Val Asp Ala Val His Lys Leu Lys Tyr Glu Asn Tyr Thr
210 215 220

Ser Ser Phe Phe Ile Arg Asp Ile Ile Lys Pro Asp Pro Pro Lys Asn
225 230 235 240

Leu Gln Leu Lys Pro Leu Lys Asn Ser Arg Gln Val Glu Val Ser Trp
245 250 255

Glu Tyr Pro Asp Thr Trp Ser Thr Pro His Ser Tyr Phe Ser Leu Thr
260 265 270

Phe Cys Val Gln Val Gln Gly Lys Ser Lys Arg Glu Lys Lys Asp Arg
275 280 285

Val Phe Thr Asp Lys Thr Ser Ala Thr Val Ile Cys Arg Lys Asn Ala
290 295 300

Ser Ile Ser Val Arg Ala Gln Asp Arg Tyr Tyr Ser Ser Ser Trp Ser
305 310 315 320

Glu Trp Ala Ser Val Pro Cys Ser Val Pro Gly Val Gly Val Pro Gly
325 330 335

Val Gly Ala Arg Asn Leu Pro Val Ala Thr Pro Asp Pro Gly Met Phe
340 345 350

Pro Cys Leu His His Ser Gln Asn Leu Leu Arg Ala Val Ser Asn Met
355 360 365

Leu Gln Lys Ala Arg Gln Thr Leu Glu Phe Tyr Pro Cys Thr Ser Glu
370 375 380

Glu Ile Asp His Glu Asp Ile Thr Lys Asp Lys Thr Ser Thr Val Glu
385 390 395 400

Ala Cys Leu Pro Leu Glu Leu Thr Lys Asn Glu Ser Cys Leu Asn Ser
405 410 415

Arg Glu Thr Ser Phe Ile Thr Asn Gly Ser Cys Leu Ala Ser Arg Lys
420 425 430

Thr Ser Phe Met Met Ala Leu Cys Leu Ser Ser Ile Tyr Glu Asp Leu
435 440 445

Lys Met Tyr Gln Val Glu Phe Lys Thr Met Asn Ala Lys Leu Leu Met
450 455 460

Asp Pro Lys Arg Gln Ile Phe Leu Asp Gln Asn Met Leu Ala Val Ile
465 470 475 480

Asp Glu Leu Met Gln Ala Leu Asn Phe Asn Ser Glu Thr Val Pro Gln
485 490 495

Lys Ser Ser Leu Glu Glu Pro Asp Phe Tyr Lys Thr Lys Ile Lys Leu
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Cys Ile Leu Leu His Ala Phe Arg Ile Arg Ala Val Thr Ile Asp Arg
515 520 525

Val Met Ser Tyr Leu Asn Ala Ser
530 535

<210> 7
<211> 4156
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
polynucleotide

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120

gttgctgatt tatattaatt ttattgttca aacatgagag cttagtacgt gaaacatgag
180

agcttagtac gttagccatg agagcttagt acgttagcca tgagggttta gttcggttaa
240

catgagagct tagtacgtta aacatgagag cttagtagct actatcaaca ggttgaactg
300

ctgatccacg ttgtggtaga attggtaaag agagtcgtgt aaaatatcga gttcgcacat
360

cttgttgtct gattattgat ttttggcgaa accatttgat catatgacaa gatgtgtatc
420

taccttaact taatgatttt gataaaaatc attaggtacc ccggctctag ttattaatag
480

taatcaatta cgggggtcatt agttcatagc ccatatatgg agttccgcgt tacataactt
540

acggtaaatg gcccgctgg ctgaccgcc aacgacccc gccattgac gtcaataatg
600

acgtatgttc ccatagtaac gccaataggg actttccatt gacgtcaatg ggtggagtat
660

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720

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780

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840

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960

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1020

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1080

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1140

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1200

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1260

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1320

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2100

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2280

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3960

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<210> 8
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

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<210> 9
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

<400> 9
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1 5

<210> 10
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<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
peptide

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1 5 10 15

Gly Gly Ser Lys
20