

2006685-0687_SL
SEQUENCE LISTING

<110> SHIRE HUMAN GENETIC THERAPIES, INC.
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

<120> LIPID FORMULATIONS FOR DELIVERY OF MESSENGER RNA

<130> 2006685-0687

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<150> 61/953,516

<151> 2014-03-14

<150> 61/894,299

<151> 2013-10-22

<160> 15

<170> PatentIn version 3.5

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ucaucaccau cugccuuuuu ggauaucuac ucagugcuga auguacaguu uuucuugauc 240

augaaaacgc caacaaaauu cugaggcgga gaaggaggua uaaauucaggu aaauuggaag 300

aguuuuguuca aggggaaccuu gagagagaau gaauggaaga aaaguguagu uuugaagaag 360

cacgagaagu uuugaaaaac acugaaagaa caacugaauu uuggaagcag uauguugaug 420

gagaucagug ugaguccaau ccauguuuua auggcggcag uugcaaggau gacauuaauu 480

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 ucuaccacu cgaagacggg accgccggcg agcagcugca caaagccaug aagcgcuacg 240
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 <223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

<220>
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 <223> /replace=" "

<220>
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<220>
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<223> /note="Variant nucleotides given in the sequence have no preference with respect to those in the annotations for variant positions"

<400> 9

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aacgggaaug ggaccgcgaa cucgcgucua agaaaaacc gaagcucauc aacgcacuga	360
gaaggugcuu cuucuggcgg uucauguucu acgguaucuu cuuguaucuc ggggagguca	420
caaaagcagu ccaacccug uuguuggguc gcauuauccg cucguacgac cccgaaaca	480
aagaagaacg gagcaucgc aucuaccucg ggauccgacu guguuugcuu uucaucguca	540
gaacacuuuu guugcaucca gcaauucug gccuccauca caucgguaug cagaugcgaa	600
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ccuauugcug ggaagaagcu auggagaaga ugauugaaaa ccuccgcaa acugagcuga	1020
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cgcggaucag ccucgcgaga gcggauuaca aagaugcaga uuuguauucg cuugauucac	1860
cguuuggaua ccucgacgua uugacagaaa aagaaucuu cgagucgugc guguguaaac	1920

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uuauaggcuaa	uaagacgaga	auccugguga	caucaaaaau	ggaacaccuu	aagaaggcgg	1980
acaagauccu	gauccuccac	gaaggauccu	ccuacuuuuu	cggcacuuuc	ucagaguugc	2040
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aaguucaaga	cacgcgucuu	uaacgggugg	caucccugug	accccucccc	agugccucuc	4620
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<211> 4542

<212> RNA

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<220>

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<223> /note="Description of Artificial Sequence: Synthetic polynucleotide"

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aaggccagug	ucguguccaa	acucuucuuc	ucauggacuc	ggccuauccu	uagaaagggg	180
uaucggcaga	ggcuugagu	gucugacauc	uaccagaucc	ccucgguaga	uucggcggau	240
aaccucucgg	agaagcucga	acgggaauug	gaccgcgaac	ucgcgucuaa	gaaaaacccg	300
aagcucauca	acgcacugag	aaggugcuuc	uucuggcggu	ucauguucua	cgguaucuuc	360
uuguauucug	gggaggucac	aaaagcaguc	caaccccugu	uguugggucg	cauuaucgcc	420
ucguacgacc	ccgauaacia	agaagaacgg	agcaucgcga	ucuaccucgg	gaucggacug	480
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aucgguaugc	agaugcgaau	cgcuauguuu	agcuugaucu	acaaaaagac	acugaaacuc	600
ucgucgcggg	uguuggauaa	gauuuccauc	ggucaguugg	ugucccugcu	uaguaauaac	660
cucaacaaau	ucgaugaggg	acuggcgcug	gcacauuucg	uguggauugc	cccguugcaa	720
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uacagccgua	ggcuuucgca	agaaaccgga	cuugagauc	gcgaagaaau	caaugaagaa	2580
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gugaucuuuc	ucgcugaggu	cgcagcguca	cuuguggucc	ucuggcugcu	ugguaauacg	2760
cccuugcaag	acaaaggcaa	uucuacacac	ucaagaaaca	auuccuauuc	cgugauuauc	2820
acuucuacaa	gcucguauua	cguguuuuac	aucuacguag	gaguggccga	cacucugcuc	2880
gcgaugggguu	ucuuccgagg	acucccacuc	guucacacgc	uuauacacugu	cuccaagauu	2940

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ccccugacga	ucuucgacuu	cauccaguug	uugcugaucg	ugauuggggc	uauugcagua	3120
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<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<221> source

<223> /note="Description of Artificial Sequence: Synthetic 10xHis tag"

<400> 11

His His His His His His His His His

1

5

10

<210> 12
 <211> 500
 <212> DNA
 <213> Artificial Sequence

<220>
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<220>
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<220>
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<210> 13
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 <212> DNA
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<220>
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<220>

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<220>
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<220>
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      substitutions and preferred embodiments"

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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa      120
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa      180
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<210> 14
<211> 200
<212> DNA
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<220>
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<220>
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      for variant positions"

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<220>
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<223> /note="See specification as filed for detailed description of
      substitutions and preferred embodiments"

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<400> 14
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CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC	120
CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC CCCCCCCCCC	180
CCCCCCCCCC CCCCCCCCCC	200

<210> 15
 <211> 250
 <212> DNA
 <213> Artificial Sequence

<220>
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<220>
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<400> 15 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	60
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aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	180
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa	240
aaaaaaaaaa	250