

Table S7 Sequence of constructed plasmids

Construct Name: FUW-lightO-GAVPO

Original Vector: FUW

Resistance/Selection Marker: Ampicillin for E.coli and Bleomycin for mammalian cells

RE site: *Bam*HI, *Eco*RI

Target gene Name: lightOn element-GAVPO

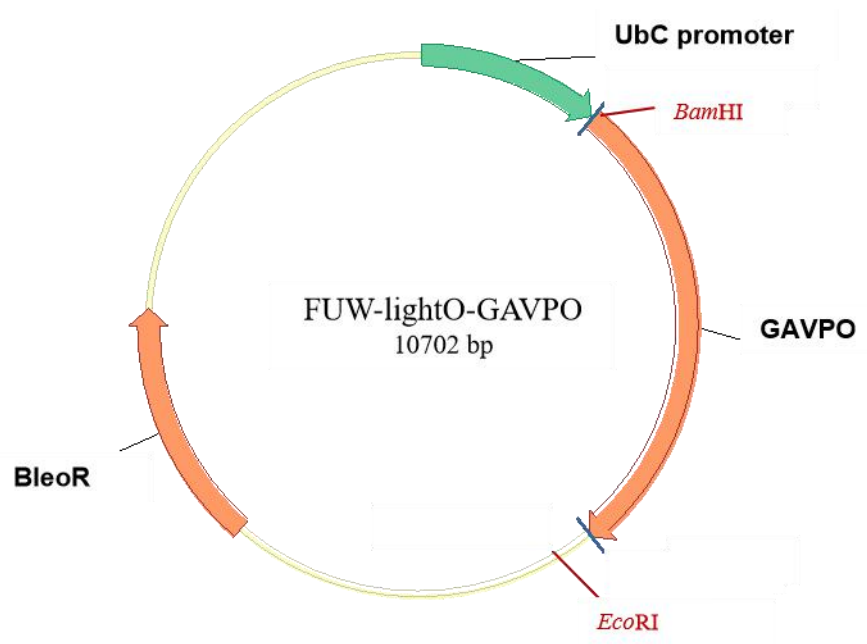
Target gene sequence:

GAVPO

1..1527 bp

```
ATGAAGCTACTGTCTTCTATCGAACAAGCATGCGATATTTGCCGACTTAAAAAGCTCAAGTGCTCCAAAGAAAAACCGAAGTGCGC
CAAGTGTCTGAAGAACAACCTGGGAGTGTCGCTACTCTCCCAAAACCAAAAGGTCTCCGCTGACTAGGGCACATCTGACAGAAGTGG
AATCAAGGCTAGAAAGACTGGAAAGATCCATCGCCACCAGATCTCATACGCTCTACGCTCCCGGCGGTTATGACATTATGGGCTAT
CTGATTGAGATTATGAAGAGGCCAAACCCCAAGTAGAACTGGGACCTGTTGACACGTCAGTTGCTCTGATTCTGTGCGACCTGAA
GCAAAAAGACACGCCAATTGTGTACGCCTCGGAAGCTTTTCTCTATATGACAGGATACAGCAATGCGGAGGTCTTGGGGAGAACT
GCCGTTTTCTTCAGTCACCCGACGGAATGGTCAAGCCGAAATCGACAAGGAAGTACGTCGACTCCAACACGATCAATACGATGAGG
AAAGCGATTGATAGGAACGCCGAGGTGCAGGTTGAGGTGGTCAATTTTAAGAAGAACGGCCAACGGTTTGTCAACTTCTTGACGAT
GATTCGGGTGCGAGATGAAACAGGGGAATACCGGTACAGCATGGGTTTCCAGTGCGAAACGGAAGTGCAGTACCCATACGATGTTT
CAGATTACGCTGAATTCCAGTACCTGCCAGATACAGACGATCGTCACCGGATTGAGGAGAAACGTAAAAGGACATATGAGACCTTC
AAGAGCATCATGAAGAAGAGTCCTTTTCAGCGGACCCACCGACCCCGGCCTCCACCTCGACGCATTGCTGTGCCTTCCCGCAGCTC
AGCTTCTGTCCCCAAGCCAGCACCCAGCCCTATCCCTTTACGTGATCCCTGAGCACCATCAACTATGATGAGTTTCCCACCATGG
TGTTTCCTTCTGGGCAGATCAGCCAGGCCTCGGCCCTTGCCCCGGCCCCCTCCCCAAGTCCTGCCCCAGGCTCCAGCCCTGCCCC
GCTCCAGCCATGGTATCAGCTCTGGCCCAGGCCCCAGCCCTGTCCCAGTCCTAGCCCCAGGCCCTCCTCAGGCTGTGGCCCCACC
TGCCCCCAAGCCACCCAGGCTGGGAAGGAACGCTGTCAGAGGCCCTGCTGCAGCTGCAGTTTGATGATGAAGACCTGGGGGCCT
TGCTTGGAACAGCACAGACCCAGCTGTGTTACAGACCTGGCATCCGTCGACAACTCCGAGTTTTCAGCAGCTGCTGAACCAGGGC
ATACCTGTGGCCCCCACACAACCTGAGCCCATGCTGATGGAGTACCCTGAGGCTATAACTCGCCTAGTGACAGGGGCCAGAGGCC
CCCCGACCCAGCTCCTGCTCCACTGGGGGCCCCGGGGCTCCCCAATGGCCTCCTTTCAGGAGATGAAGACTTCTCCTCCATTGCGG
ACATGGACTTCTCAGCCCTGCTGAGTCAGATCAGCTCCGACTACAAAGACGATGATGACAAGTAA
```

Vector Map:



Construct Name: FUW-lightO-*Wtl*

Original Vector: FUW-TetON-GFP

Resistance/Selection Marker: Ampicillin for E.coli and Bleomycin for mammalian cells

RE site: *Pst*I, *Bsr*GI

Target gene Name: lightOn element-*Wtl*

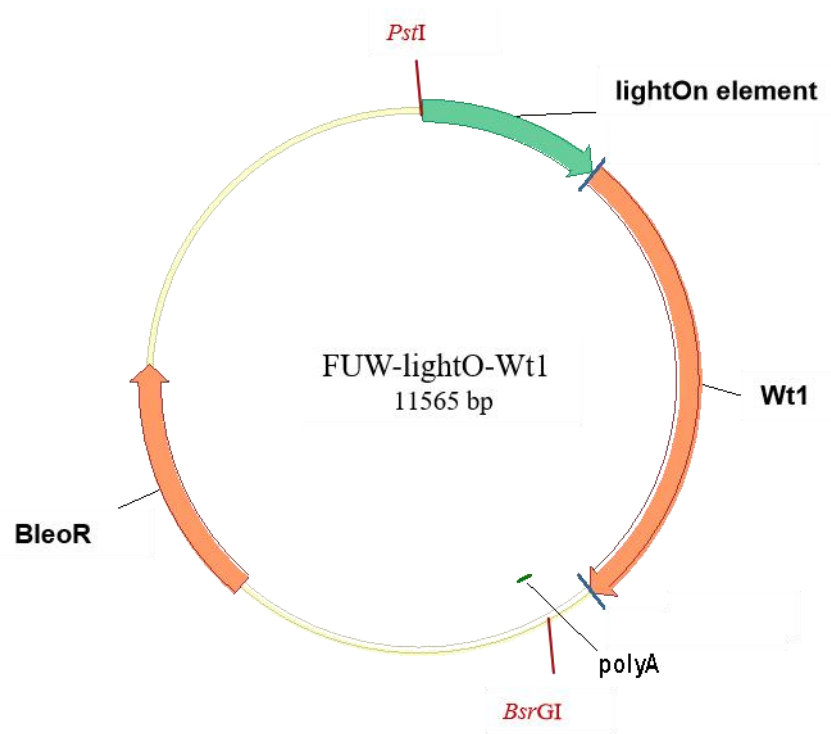
Target gene sequence:

CDS	<i>PolyA-5×UAS_G-Wtl-BGH polyA</i>	1..3694 bp
PolyA	bases 1..181 bp	
5×UAS _G	bases 182..300 bp	
<i>Wtl</i>	bases 378..3469 bp	
BGH polyA	bases 3470..3694 bp	

```
1 CTTGGAGCGG CCGCAATAAA ATATCTTTAT TTTCATTACA TCTGTGTGTT GGTTTTTGT GTGAATCGAT
71 AGTACTAACA TACGCTCTCC ATCAAAACAA AACGAAACAA AACAACTAG CAAAATAGGC TGTCCCCAGT
141 GCAAGTGCAG GTGCCAGAAC ATTTCTCTAT CGATAGGTAC CGAGTTTCTA GACGGAGTAC TGTCTCCGA
211 GCGGAGTACT GTCCTCCGAC TCGAGCGGAG TACTGTCTC CGATCGGAGT ACTGTCTCC GCGAATTCCG
281 GAGTACTGTC CTCCGAAGAC GCTAGCGGGG GGCTATAAAA GGGGGTGGGG GCGTTCGTCC TCACTCTAGA
351 TCTGCGATCT AAGTAAGCTT GGCCACCTGT GTGAATGGAG CGGCCGAGCA TCCTGGCTCC TCCTCTTCC
421 CTGCTGCCGG CCCCTCTTAT TTGAGCTTTG GGAAGCTGGG GGCAGCCAGG CAGCTGGGGT AAGGAGTTCA
491 AGGCAGCGCC CACACCCGGG GCTCTCCGCA ACCCGACCGC CTGCCTGCTC CCCCTTTCCT TTTCCGCCCC
561 TCCCTCCAC CCACTCATTC ACCCACCCAC CCAGAGAGAG GACGGCAGCC CAGGAACCCG GGCCCGCCG
631 CTCCTCGCCG CGATCCTGGA CTTCTCTCTG TCGCAGGAGC CGGCTTCCAC GTGTGTCCCG GAGCCGGCGT
701 CTCAGCACAC GCTCCGCCGG GAGCCCGGGT GCGTCCAGCA GCCGAGCAA CCTGGGGACC GAGGCCCCCG
771 GAGCGCCTGG GCCAAGTCCA GCGCCGAGAA TCCGAGGAT CGCAGGAGCG GAGAACCCTC CGCATCCGAG
841 CCGCACCTCA TGGGTTCGA CGTGCGGGAC CTGAACGCGC TGCTGCCCGC TGTGTCTTCG CTGGGCGGCG
911 GCGGCGGCGG CTGCGGGCTC CCTGTGAGCG GCGCAGCGCA GTGGGCGCCC GTGTTGGA CTGCGCTCC
981 GGGCGCCTCG GCTTACGGGT CGCTGGGCGG TCCCGCGCCT CCTCCGCTC CGCCGCCGCC TCCGCCGCCA
1051 CCCCACTCCT TCATCAAACA GGAGCCAGC TGGGGCGGCG CCGAGCCACA CGAGGAGCAG TGCCTGAGCG
1121 CCTTACCTT GCACTTCTCG GGCCAGTTCA CCGGTACAGC CGGGGCTGT CGTACCGAC CCTTCGTGTC
1191 TCCCCGCCC AGCCAGGCGT CCTCGGGCCA GGCCAGGATG TTCCCAATG CGCCCTACCT GCCCAGCTGC
1261 CTGGAGAGCC AGCCTACCAT CCGCAACCAA GGATACAGCA CGGTCACTTT CGACGGGGCG CCCAGCTATG
1331 GCCACACGCC CTCGCATCAC GCGGCGCAGT TCCCAACCA TTCCTTCAA CACGAGGACC CCATGGGCCA
1401 GCAGGGCTCG CTGGGCGAGC AGCAGTACTC CGTGCCACCT CCGGTGTATG GCTGCCACAC CCCTACTGAC
1471 AGTTGCACAG GCAGCCAGGC CCTGCTCTG AGGACGCCCT ACAGCAGTGA CAATTTATAC CAAATGACCT
1541 CCCAGCTTGA ATGCATGACC TGGAATCAGA TGAACCTAGG AGCTACCTTA AAGGAATGG CTGCTGGGAG
1611 CTCCAGCTCA GTGAAATGGA CAGAAGGGCA GAGCAACCAC GGCACAGGGT ATGAGAGTGA GAACCACAG
1681 GCCCCATCC TCTGTGGTGC CCAGTACAGA ATACACACC ACGGGGTCTT CCGAGGCATT CAGGATGTGC
1751 GGCGTGTATC TGGAGTGCC CCAACTCTTG TCCGTCAGC ATCTGAAACC AGTGAGAAAC GTCCTTTCAT
1821 GTGTGCATAC CCAGGCTGCA ATAAGAGATA TTTTAAGCTG TCCCACTTAC AGATGCATAG CCGGAAGCAC
1891 ACTGGTGAGA AACCATACCA GTGTGACTTC AAGGACTGCG AGAGAAGGTT TTCTCGCTCA GACCAGCTCA
```

1961 AAAGACACCA AAGGAGACAC ACAGGTGTGA AACCATTCCA GTGTAAACT TGTACGCGAA AGTTTTCCCG
2031 GTCCGACCAT CTGAAGACCC ACACCAGGAC TCATACAGGT AAAACAAGTG AAAAGCCCTT CAGCTGTCGG
2101 TGGCACAGTT GTCAGAAAAA GTTTGCGCGC TCAGACGAAT TGGTCCGCCA TCACAACATG CATCAGAGAA
2171 ACATGACCAA ACTCCAGCTG GCGCTTTGAG GGGTCCGACA CGGAGACAGT CCAGCATCCC AGGCAGGAAA
2241 GTGTGCAAAC TGCTTCCAAA TCTGATTTTG AAATTCCTCC CACTCACCTT TCAAAGGACA CGACTGTGGA
2311 TCTACATCCG ACTTCCAAGA CAGCACACCT GATTGACTGC ATCCTATCAG GTTTGCCGGA AGGAGTCGGT
2381 GCTCCGCCCA CTTTGTATTA ACTCACAGGC CTGAAAAAAG TGGTTCACGG TGTCTAGAAA GTCCATTGCT
2451 ATTGTCTGAA TTTTCTACTG TTAGAAGAAC CATTGTTGAT AATGCCCCC GCCCCCCC CCGGGTTTCC
2521 TCTTCTCCTT TGTGATCATT TCCCCAGGAT TAGAGAGACT GTTACATTTT CTTTCATGGG ATATTTATAG
2591 GCCAGGGCAT GTGTATGTGC CTGCTAATGT AAACCTCTGC ATAGTTCCCA TTTACTAACT GCCCTAGAAA
2661 GAAATAAATC AGAGAGCAAG GCACCAGGGG CAAGAATCGT GCAGAATTC AGAGGTCTGG CTGCAAACCT
2731 GGAAACCTGG AAGGCCAGAT GTAATTCTAC AGGCGATTGT TAAAGCTCAT AGGTTTTGAG TAACTGCATA
2801 GTAGGTTGGT ATTAAGTAGA ACTCCTGTAT AGTTAGGACA GAGAGGAGCC TTCCTGCTCA GCTATTCAT
2871 CTGAACACTA GCACTGGGCT CTTAAGAAAT GATGTTTTAA GAGCAGAGAT CTTTTTTTAA TGTCTTTGAT
2941 TTATTTTTTA GTTGTAATTA GGTACATCCT CAGAGATGTA CTTTCTCCT CTTGTGCAGG ATGTGGAGGA
3011 CTCAGTTCCA TCATCTGGGG CATCTTTAGA GTGTATAGAC CACTGCTT ATGTGGCTTC AAGTTGTAAA
3081 AATTAAAATG ACTTTAAAAG AAACCTAGGG CTGGTCCAGG ATCTTCACTG GTAAGACTGT TCTTAAGTAA
3151 CTTAAGTATC TTTGAATCTG CAAGTATGTA GGGAAAAA AAAGATATAT TATTGTGAGG AAATCCATTG
3221 TTTAAAGGTG TCGTGTGTT GTTGTGTTT TTTAAAGGGA GGGAGTTTAT TATTTACTGT AGCTTGAAAT
3291 ACTGTGTAAA TATATATGTA TATATATGAT GTGCTCTTG TCAACTAAAA TTAGGAGGTG TATGGTATTA
3361 GCTGCATCAC TGTGTGGATG TCAATCTTAC AGTGATTGA TGATAATACT AAAAATGTAA CCTGCATCTT
3431 TTTCCACTTG GCTGTCAATT AAAGTCTATT CAAAAGGAAC TGTGCCTTCT AGTTGCCAGC CATCTGTTGT
3501 TTGCCCCCTC CCCGTGCCTT CCTTGACCCT GGAAGGTGCC ACTCCCACTG TCCTTTCCTA ATAAAATGAG
3571 GAAATTGCAT CGCATTGTCT GAGTAGGTGT CATTCTATTC TGGGGGGTGG GGTGGGGCAG GACAGCAAGG
3641 GGGAGGATTG GGAAGACAAT AGCAGGCATG CTGGGGATGC GGTGGGCTCT ATGG

Vector Map:



Construct Name: FUW-lightO-*Gata4*

Original Vector: FUW-TetON-GFP

Resistance/Selection Marker: Ampicillin for E.coli and Bleomycin for mammalian cells

RE site: *Pst*I, *Bsr*GI

Target gene Name: lightOn element-*Gata4*

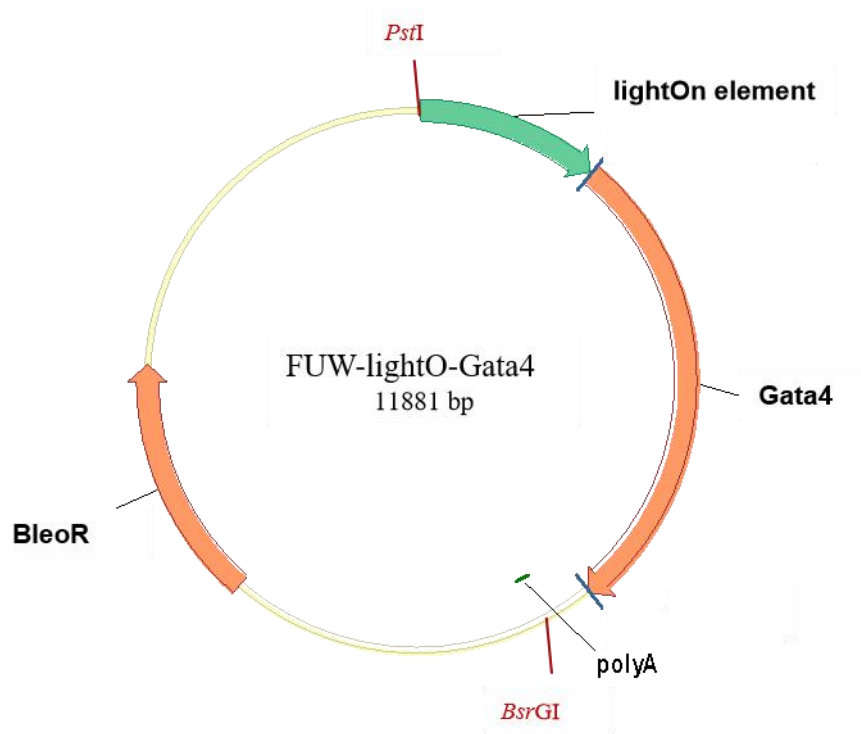
Target gene sequence:

CDS	<i>PolyA-5×UAS_G-Gata4-BGH polyA</i>	1..4010 bp
PolyA	bases 1..181 bp	
5×UAS _G	bases 182..300 bp	
<i>Gata4</i>	bases 378..3785 bp	
BGH polyA	bases 3786..4010 bp	

```
1 CTTGGAGCGG CCGCAATAAA ATATCTTTAT TTTCATTACA TCTGTGTGTT GGTTTTTGT GTGAATCGAT
71 AGTACTAACA TACGCTCTCC ATCAAAACAA AACGAAACAA AACAACTAG CAAAATAGGC TGCCCCAGT
141 GCAAGTGCAG GTGCCAGAAC ATTTCTCTAT CGATAGGTAC CGAGTTTCTA GACGGAGTAC TGTCTCCGA
211 GCGGAGTACT GTCCTCCGAC TCGAGCGGAG TACTGTCTC CGATCGGAGT ACTGTCTCTCC GCGAATTCCG
281 GAGTACTGTC CTCCGAAGAC GCTAGCGGGG GGCTATAAAA GGGGGTGGGG GCGTTCGTCC TCACTCTAGA
351 TCTGCGATCT AAGTAAGCTT GGCCACCGCG CCGGGAGCAG GGGACAAGCC GGAGGCCCGC AGAGTGCCG
421 CCCGAGGCTC AGCCGAGTT GCAGCTCCGC GGA CTACAGG AGATCGCGCC GGTTTTCTGG GAAACTGGAG
491 CTGGCCAGGA CTGCCGCTTC GCTTCGAAGG GACCGGGCCC TCTTTGTCAT TCTTCGTGG AGCCGCTCTG
561 GAGCTAGCAG CTGCGCCTGG GTGTGTAGCA GGCAGAAAGC AAGGACTAGG CTTCTTTAGC CGGTGGGTGA
631 TCCGAAGGCC TGCTCAGGGT GTTCGAGACC AGCCTGGACT GCGTCTGGGC ACCTCCAGCC TCTGGGCCCT
701 GGAATAGAGT CCGCCCTCCC GCACGATTC TGGAGCAACC GCAAATCAA TTTGGGATTT TCTTTTCTCT
771 GAGCAAACCA GAGCCTAGAG GTTCTGCTT TGATGCTGGA TTTAATTCGT ATATATTTTG AGCGAGTTGG
841 GCCTCTCTC GTTTTTTGAT CTCCGGTTGT TTTTTTTTGG GGGGGGGGGT TAGTTTTTGG GTTTTTGTTT
911 TGTTTTGTTT TGTTTGTATT TTTGGTGACA GTTCCGCACA CCCGCAATCT AGTTCTTGTC TGCCTCGTGC
981 TCAGAGCTTG GGGCGATGTA CCAAAGCCTG GCCATGGCCG CCAACCACGG CCCCCCGCCC GGCGCTACG
1051 AAGCAGGTGG CCCTGGCGCC TTCATGCACA GCGCGGGCGC CGCGTCCTCG CCCGTCTACG TGCCCACTCC
1121 GCGGGTGCCG TCCTCTGTGC TGGGCTGTG CTACCTGCAG GGCGGTGGCA GTGCCGCTGC AGCTGGAACC
1191 ACCTCGGGTG GCAGCTCCGG GGCCGGCCCC TCGGTGTCAG GGCTGGGAC CCAGCAGGGT AGCCCTGGCT
1261 GGAGCCAAGC TGAGCCGAG GGAGCCGCT ACACCCCGCC GCCCGTGTCC CCGCGTTCT CTTTCCCGGG
1331 GACTACTGGG TCCCTGGCGG CCGCTGCCGC CGCTGCCGA GCCCGGAAG CTGCAGCCTA CGGCAGTGGC
1401 GCGGGGGCGG CGGGCGCTGG TCTGGCTGGC CGAGAGCAGT ACGGGCGTCC GGGCTTCGCC GGCTCCTACT
1471 CCAGCCCCTA CCCAGCTAC ATGGCCGACG TGGGAGCATC CTGGGCCGCA GCCGTGCCG CCTCTGCCG
1541 CCCCTTCGAC AGCCAGTCC TGCACAGCCT GCCTGGACGG GCCAACCCTG GAAGACACCC CAATCTCGTA
1611 GATATGTTTG ATGACTTCTC AGAAGGCAGA GAGTGTGTCA ATTGTGGGGC CATGTCCACC CCACTCTGGA
1681 GCGGAGATGG GACGGGACAC TACCTGTGCA ATGCCTGTGG CCTCTATCAC AAGATGAACG GCATCAACCG
1751 GCCCTCATT AAGCCTCAGC GCCGCTGTG CGCTTCCCGC CGGGTAGGCC TCTCCTGTGC CAACTGCCAG
1821 ACTACCACCA CCACGCTGTG GCGTCGTAAT GCCGAGGGTG AGCCTGTATG TAATGCCTGC GGCCTTACA
1891 TGAAGCTCCA TGGGGTTCCC AGGCCTCTTG CAATGCGGAA GGAGGGGATT CAAACCAGAA AACGGAAGCC
```

1961 CAAGAACCTG AATAAATCTA AGACGCCAGC AGGTCCTGCT GGTGAGACCC TCCCTCCCTC CAGTGGTGCC
2031 TCCAGCGGTA ACTCCAGCAA TGCCACTAGC AGCAGCAGCA GCAGTGAAGA GATGCGCCCC ATCAAGACAG
2101 AGCCCGGGCT GTCATCTCAC TATGGGCACA GCAGTCCAT GTCCCAGACA TTCAGTACTG TGTCCGGCCA
2171 CGGGCCCTCC ATCCATCCAG TGCTGTCTGC TCTGAAGCTG TCCCCACAAG GCTATGCATC TCCTGTCACT
2241 CAGACATCGC AGGCCAGCTC CAAGCAGGAC TCTTGGAACA GCCTGGTCCT GGCTGACAGT CATGGGGACA
2311 TAATCACCGC GTAATCAGCG CCCCCCTTC CCTCTTCAA TTCCTGCTCG GACTTGGGAC GTGGGGGCCA
2381 GCAAAGTAAA AGGCTGGGGC ACCCTTG GCC AGCCCCTTTG TCTGGGAACA ACTCCTGAAG AACAACTGGG
2451 TAGAACTTGA AGTTGTTGAC AATCACTTAG GGATATGGGT GTTCCGGGTT GTTCAAACAC CTTTCCAGGT
2521 GGAGCACTGG AAAAGCCTGC GTTCTTACAG AGAAGCCAC CTTGGCTGCA AGCACAGCAC AGTGAGGCAA
2591 GAGACTTCTT CCTTCCTTAT TCTCCACCTG CCTGTCCAGG ACAGACACAT AATCTCCTTC ACCCCAGCTC
2661 CCCACCCAGT TGTGGTGGTG GGTTTTCTT TGTGATCCTA GAGTGGCTGT AGGGGCGGAG GCTTCAAGAC
2731 ACCATCTACA GTCTGAGCAG GGTGTCTACT TGTTGTAGAC TAGACATAGA AGCCCTGCCC TTGTCCAACA
2801 CTCCCCTTGC TTGAGGCATG GCACATCTCT GCATGTCCCA TACCAGATCT GACTCCAAAG TGCTGGGTTC
2871 AATGCAGATG TTAATGAATG CTTCTGGGG AGATTAGGTG AGGGGAAGGC ACATCACCCA TCACACAGAA
2941 TAGCTTCATC AAATCGCAGC CTGGCCATGG TGCCTTCCCT TCCTCTCCA GGAACATCAA ACCCCTGTCT
3011 CTCCAGCCTG AACATCTACC CTCTGCAAAA GTAGAGCCCA GTTGTGCAGC TAATGCCACT AGGTGCTATA
3081 TCCCAGCATC CTTTTCACCC CTTACACAC AGGGGTTCCA AGGAGGAACA AAACCTGCTA CCAAAGCAGC
3151 CTTGGTGACT ATGGCTCATC TGCACCTCAG GGGGTGGGG AGGGCCCTCT GGAGGTTGTG TCTACAGCAC
3221 AATACTGTTC CCAGGACTCT AGCTTGCTTG CCCCAGCCT GCCAAGCCAA GCCCTCTTAA GTCAGACAGT
3291 TACCTGGCTC TGGGACTTTC TCCAGCACAG ATCCTTTGTC TAGAAAATAC AGACTGTTTG CAAAATAAAT
3361 TCAAAGCAGA AACAACTAAA GGAAATTTGT GAAAGGACAA AGGTGATAGA CGGGAGAAGA TGTCCCCAGG
3431 GCTGGCGGGA CAGTCATGAT AGCAGCTGTC CTAGGATTGG CCTCCCTCCC ATCTCCCACC ATTACTGGGG
3501 CTCCCAGAGA TTCTTCCTTG TCCTCATCAC CCACAGAGCT GTAGCCAAT GTGGCATTAC TTTATTTTAC
3571 CAAAAATTCC CAGCCCCACC CCTAACCTT ACTGGCCGTA GCAGAGAATA GCTTCGAACC AAGATTCTGT
3641 TGTAATCATT TTCGCTGTTT CTCCCTCAAG GCCGCCTTCC CCATGCCTGC CCCTCCTCCA CAACCCGTTA
3711 ACATTGTCTT AAGGTGAAAT GGCTGTAAAA TCAGTATTTA ACTAATAAAT TTATCTGTAT TCCTGTTTCC
3781 TCCGACTGTG CTTCTAGTT GCCAGCATC TGTTGTTTGC CCCTCCCCG TGCCTTCCTT GACCCTGGAA
3851 GGTGCCACTC CCACTGTCCT TTCCTAATAA AATGAGGAAA TTGCATCGCA TTGTCTGAGT AGGTGTCATT
3921 CTATTCTGGG GGGTGGGGTG GGGCAGGACA GCAAGGGGA GGATTGGGA GACAATAGCA GGCATGCTGG
3991 GGATGCGGTG GGCTCTATGG

Vector Map:



Construct Name: FUW-lightO-*SfI*

Original Vector: FUW-TetON-GFP

Resistance/Selection Marker: Ampicillin for E.coli and Bleomycin for mammalian cells

RE site: *Pst*I, *Bsr*GI

Target gene Name: lightOn element-*SfI*

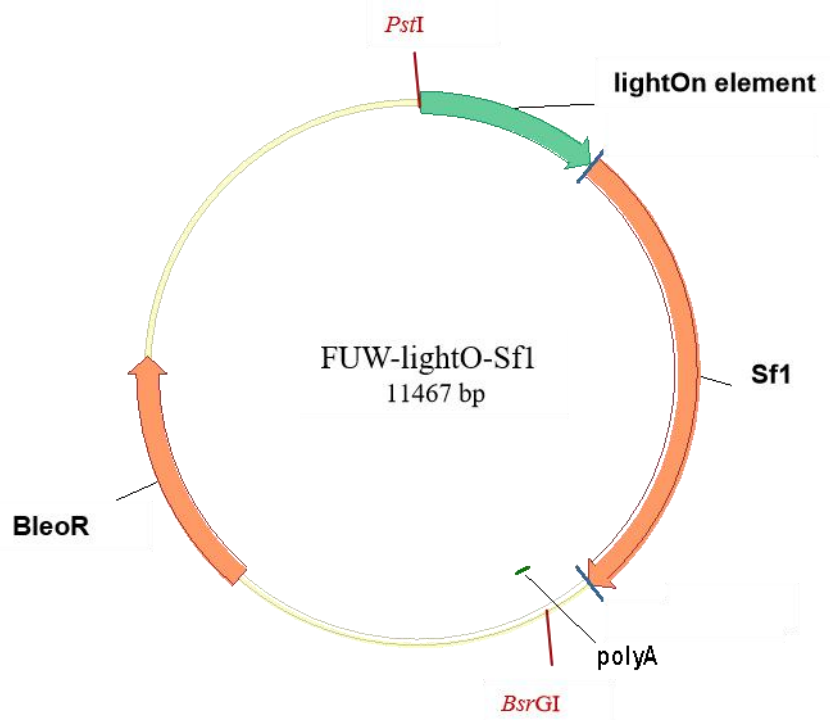
Target gene sequence:

CDS	<i>PolyA-5×UAS_G-SfI-BGH polyA</i>	1..3596 bp
PolyA	bases 1..181 bp	
5×UAS _G	bases 182..300 bp	
<i>SfI</i>	bases 378..3371 bp	
BGH polyA	bases 3372..3596 bp	

```
1 CTTGGAGCGG CCGCAATAAA ATATCTTTAT TTTCATTACA TCTGTGTGTT GGTITTTTGT GTGAATCGAT
71 AGTACTAACA TACGCTCTCC ATCAAAACAA AACGAAACAA AACAACTAG CAAAATAGGC TGTCCCCAGT
141 GCAAGTGCAG GTGCCAGAAC ATTTCTCTAT CGATAGGTAC CGAGTTTCTA GACGGAGTAC TGTCTCCGA
211 GCGGAGTACT GTCCTCCGAC TCGAGCGGAG TACTGTCTCT CGATCGGAGT ACTGTCTCTCC GCGAATTCCG
281 GAGTACTGTC CTCCGAAGAC GCTAGCGGGG GGCTATAAAA GGGGGTGGGG GCGTTCGTCC TCACTCTAGA
351 TCTGCGATCT AAGTAAGCTT GGCCACCGCA TATAGAGCGG CCACCCCGGC CCCGCGCGGC GGGTTCGCGA
421 AGCGCGCAGT GCGGCGGAGG GGCCCGGGTC CCAGGTGCGC CTCGAGCAGC CCCGCGGGCG GCGGGCGCGG
491 GGAGGCGGGG GCAGAGCGGG ACGGTCTCCC CGCCCTCGGC CCGAGTGGCC GTCATTGCGG GCGGGCGGGG
561 CTGAGCCCGG GTGCGGCTTC ATCGCGGGCG GCGGCGCGGC CAAAAGGCGG ACGCCGCGGG CATGGACTAT
631 TCGTACGACG AGGACCTGGA CGAGCTGTGT CCAGTGTGTG GTGACAAGGT GTCGGGCTAC CACTACGGGC
701 TGCTCACGTG CGAGAGCTGC AAGGCTTCT TCAAGCGCAC AGTCCAGAAC AACAAGCATT ACACGTGCAC
771 CGAGAGTCAG AGCTGCAAAA TCGACAAGAC GCAGCGTAAG CGCTGTCCCT TCTGCCGCTT CCAGAAGTGC
841 CTGACGGTGG GCATGCGCCT GGAAGCTGTG CGTGCTGATC GAATGCGGGG TGGCCGGAAC AAGTTTGGGC
911 CCATGTACAA GAGAGACCGG GCCTTGAAGC AGCAGAAGAA AGCACAGATT CGGGCCAATG GCTTCAAGCT
981 GGAGACCGGA CCACCGATGG GGGTGCCCCC GCCACCCCT CCCCACCGG ACTACATGTT ACCCCCTAGC
1051 CTGCACGCAC CGGAGCCCAA GGCCCTGGTC TCTGCCCCAC CCAGTGGGCC GCTGGGTGAC TTTGGAGCCC
1121 CATCTCTACC CATGGCTGTG CCTGGTCCCC ACGGACCTCT GGCTGGCTAC CTCTATCTG CCTTCTCTAA
1191 CCGCACCATC AAGTCTGAGT ATCCAGAGCC CTATGCCAGC CCCCACAAC AGCCAGGGCC ACCCTACAGC
1261 TATCCAGAGC CTTTCTCAGG AGGGCCCAAT GTACCAGAGC TCATATTGCA GCTGCTGCAA CTAGAGCCAG
1331 AGGAGGACCA GGTGCGCGCT CGCATCGTGG GCTGTCTGCA GGAGCCAGCC AAAAGCCGCT CTGACCAGCC
1401 AGCGCCCTTC AGCCTCCTCT GCAGAATGGC CGACCAGACC TTTATCTCCA TTGTGCACTG GGCACGAAGG
1471 TGCATGGTCT TTAAGGAGCT GGAGGTGGCT GACCAGATGA CACTGCTGCA GAACTGTTGG AGCGAGCTGC
1541 TGGTGTGGGA CCACATCTAC CGCCAGGTCC AGTACGGCAA GGAAGACAGC ATCCTGCTGG TTAAGTGGACA
1611 GGAGGTGGAG CTGAGCACAG TGGCTGTGCA GGCTGGCTCC CTGCTGCACA GCCTGGTCT GCGGGCCCAA
1681 GAGTTAGTGC TCCAGTTGCA TGCACTGCAG CTGGACCGCC AGGAGTTCGT CTGTCTCAAG TTCCTCATCC
1751 TCTTCAGCCT CGATGTGAAA TTCCTGAACA ACCACAGCCT CGTAAAGGAC GCCCAGGAAA AGGCCAACGC
1821 TGCCCTGTTG GATTACACCT TGTGTCACTA CCCACACTGC GGGGACAAAT TCCAGCAGTT GCTATTGTGC
1891 CTGGTGGAGG TGCGGGCCCT GAGCATGCAG GCCAAGGAGT ACCTGTACCA CAAGCATTG GGCACGAGA
```

1961 TGCCCCGCAA CAACCTTCTC ATTGAGATGC TGCAGGCCAA GCAGACTTGA GCCTGGGTGC CAGGCAGCGG
 2031 GCAATAGGCA GGGATGCCAC TGCCTCCAAA AGACTCCTTG CATTAGGTGA TCCAGGAGCC CTGTCACTAA
 2101 GCCCCTGCCC CTGAGCTCCA GAGCTGTGTG TTTGGGCAAG GATGGGCGGG GATTGGCCGG GGCAGGTTGC
 2171 CTTTACTAGC CATTGGCCTG TGTCCGCCAC TTGGAGTGCC CCAAAGGGGG CTCTAACCA TTCCTTCCTC
 2241 CATCAGCCCC CAGCTTTTTT TCCTGGTATC TGAGGTCCCA GGAGGAGGCT CAGGATTCCC TGGTGGGTCT
 2311 GGATGTCCCT TGGGTCAGAG GTCATCCTTT CCCTCTCTCC TGTTATCAGA GGCAAAGGAA GGTCTACAGG
 2381 CATCAATGAG GGCAAAGGAG GGGGTCTCCA GACTCCACTG AAGCAGGAAG TCCACTGTTG TAAACTGAGT
 2451 TTGCTAAATT GGGTCCCCAG AGGATACCAT GAGAGTGGGT AGGGCAAAAA GAGCCCTTTC CGCCCTCTAC
 2521 CCATCTAATT CTGATCCTCT ACCTGTAGGA GGACTTTGGT GTGATCATCC TTCTCCAGG GCCCGGCTAC
 2591 CCAGGGAGGA GGAGTCTGGT GTAGCCAACA TTCCTGCCCT AACCTGCCC ATCACCAGCT GGCTGGGCTG
 2661 GTATTATCT GCAAGGTTGA AGTCACTGGG ATTCTTTTCC TTTCACCTAG ATAGTCCTTG GAAAGTGTGT
 2731 GAGAGAGAAG TGGGCAGGAG ACAGACTGGG GACTGAGCTG GGATATGGGG ACTAGCATCA AAGCTTTCTC
 2801 CTGACATCTC TTTCCAAGAG TCGGGGTGGC ATCTGTACCC CACCTCACCC CCGAGAAGTG CTATTGCTTG
 2871 CCCTCTGCCT CAGCCCCACT AGGGGAACAA CAGGAGGCCT GCTGGGGCTT AGAGTCCGTG CAGGTGGGGA
 2941 TATGGGTAAA TCTAGGAGAA CTCACAGATC TTTATATGAG GACAGTGCTG AGGACTTTCT CATGGCTCCA
 3011 TCCTTTTGGT CCCTCGCCAC TACCCTTGAA GCTGGCTTCA GTTCCCTGGC TGCTGCTTTG CCTCCTGAAA
 3081 GCCACTCTGT AGGACCAAGC ACTCGGGGGA GAGGCCTAAG CCATCCTCTG TTCCAGACTG GACATCCACT
 3151 GTCTTTCCTG CTTTCGCGTC AGATTTACAG CTTATGCTAG GCCACCCAA CTGGACAAGG CTGTCTCCTG
 3221 TCTTCTACTA CCCTGGCTCA GCCCCACCT CTGCCCTGA AATGCGTGCT CCCACCAAGG CCAGAGACCC
 3291 ACAGCCCCAA GACAAGAAGT GCCCTTATAA ACCCTGCGAG CCCTGCAGCC CTGAAATAAA TTTTGCAATT
 3361 AGTTTCCAGT ACTGTGCCTT CTAGTTGCCA GCCATCTGTT GTTTGCCCT CCCCCGTGCC TTCCTTGACC
 3431 CTGGAAGGTG CCACTCCCAC TGTCTTTTCC TAATAAAATG AGGAAATTGC ATCGCATTGT CTGAGTAGGT
 3501 GTCATTCTAT TCTGGGGGGT GGGGTGGGGC AGGACAGCAA GGGGGAGGAT TGGGAAGACA ATAGCAGGCA
 3571 TGCTGGGGAT GCGGTGGGCT CTATGG

Vector Map:



Construct Name: pLenti-CMV-*Dmrt1*

Original Vector: pLenti-CMV-GFP-Zeo

Resistance/Selection Marker: Ampicillin for E.coli and Bleomycin for mammalian cells

RE site: *Bam*HI, *Bsr*GI

Target gene Name: *Dmrt1*

Target gene sequence:

Dmrt1

1..2251 bp

```
1 AGAAAAAAGA AAAAAGAAAA GAGGTACAAC CCCCCACCCA CTCCCCGAGC TCTTCATTTA GACTACAGGT
71 CCAGCTGCGG TGCACCCGCC TCCTGCGCGC CTTCTAGGCA GCCGGCTGGG TGGATCCGGG AGCGGGAGAC
141 GAAGCTCCAT GCCGAACGAC GACACATTCG GCAAGCCCTC TACCCCGACG GAGGTTCTCTC ACGCTCCCGG
211 GGCCCCGCCG CAGGGCAAAG CCGGAGGTTA CAGCAAAGCT GCCGGGGCGA TGGCTGGAGC GGCTGGAGGC
281 TCGGGCGCGG GGGGCGCGG AGGTGCCTCG GGCTCCGGGC CGTCGGGCCT GGGTTCTGGA AGCAAGAAGT
351 CCCCAGAGGCT GCCCAAATGC GCTCGCTGCA GGAACCACGG CTACGCGTCG CCGCTCAAGG GCCACAAGCG
421 CTTCTGCATG TGGCGGGATT GCCAGTGCAA GAAGTGCAGC CTGATTGCGG AGCGACAGCG GGTGATGGCC
491 GCGCAGGTGG CCCTGAGAAG ACAGCAGGCC CAGGAAGAAG AACTGGGTAT CAGCCACCCA ATTCCGCTGC
561 CCAGCGCAGC CGAGCTCCTG GTCAAAAGAG AGAATAATGC CAGCAACCCG TGCCTGATGG CCGAGAACAG
631 CAGCTCTGCC CAGCCCCAC CGGCCAGCAC CCCAACCCCC GCTGCCTCAG AGGGACGCAT GGTATCCAG
701 GATATTCTCT CTGTCAACAG CAGAGGGCAT ATGGAGAACA CATCTGACCT GGTATCAGAC CCCGCTACT
771 ACAGCAGCTT TTACCAGCCT TCTCTGTTTC CTTACTACAA CAATCTGTAC AACTACCCCC AGTATTCCAT
841 GGCCTTGCTT GCTGAGTCTT CCTCAGGGGA GGTGGGGAAT TCCCTCGGGG GATCCCCCGT GAAGAACAGC
911 CTGCGGAGTC TCCCAGCACC TTACGTGCCT GCTCAGACTG GAAACCAAGT GCAGATGAAG ACCTCAGAGA
981 GCCGCCACCC AGTGAGCTCC CAGTACCGGA TGCACTCATA CTACGGGCCT CCCTCCTACC TGGGCCAGAG
1051 CATGTCCCAG ATCTTTACCT TCGAGGAAGG CCCCTCTAC TCAGAAGCCA AAGCCAGTGT GTTCTCGCCC
1121 CCCAGCAGTC AAGATTCTGG CTTGGTCTCC CTCTCCAGCA GCTCTCCGAT GAGCAACGAG AGCTCGAAGG
1191 GAGTTCTGGA ATGTGAGTCT GCGTCCTCGG AACCTAGCAG CTACGCCGTC AACCAGGTCC TGAAGAGGA
1261 TGAGGACGAG TGAGCCGCCG CCGGGGCTAC TCTGGTCACA GGGTGTTAGG CGGCTTGTTT TGTTATCGGC
1331 AGGGTTTGTT GTTATTTGAA TTGGCAGTGC TGGTGCCCCA TTCAGAAGTT TGGTTCATGT TAGAGTTAGG
1401 TTAACAACT TGTAACAGTG TAGGATCCCA GACTACCATC TGCAAGAAGT AAGTGCCTGG CTCACCAAGT
1471 TTAACAGTA ATGAGACTCG CTCCCTTGCC CAGAGCCTGT CCCTTCCCT TCCTTCTCCA CTGTGTTGGT
1541 TTTTTTTTTT TGGGGGGGGG GGGGAGGATC TTCCAGAGAA AAGAATTGAC TGTATGCCA AGTTACAATT
1611 ACATGCTACT TTTGGGGTTC AAATGAAATT TTCGGTGCCT TAGGTTGTAA CCAAGTTTTC AGGATTTTTT
1681 AGAAAACCAA GAAAATATAA ATTTAGCTCT AAGTACTTGA CCAGTGAGAA GAGCGGGCAA ACCTCTTTTT
1751 AGAATTCTGC AGACAGTAAA TGGAGACACT GTTTATGTTT TGGTGATGTG TTGGTGGCTG CACCCACAC
1821 CCCAAATCCA AATGTAACAG GAATACAGTA AGAAGAAACC ACAGCGAGAG GAAACAGGGA AAACCTCCCC
1891 AAGCCTTACT TCTCAGATAA AGGGTAACTT AGAAAACAAT ACACCGTGAA GTGACCCAG GAGGCATTTT
1961 CTGGGTGTTG TTCCTAGAAT GAGTTTAACT AACGCATACA TTTTCTTTAC CACAGGGGGA AAAATGGAGG
2031 CAATCTAGAC GATTTTGTA CTTAGGTTG TAATCTGGCT TGAAAATTAG TACATCTTTA AAAGTTACCA
2101 CTGATATTG AGTTCATTAT TTTGTTAAAA AAATTGCTTT TAAAGTACTT ATGTTACAGG AAGCCATCCT
2171 GAAATGGAAC CGGTCTAAAA AAAAATAATT GTGGTGTGTG GTTGCACTG TACCTGAAAT AAAACGTTA
```

2241 TTGATGACTG C

Vector Map:

