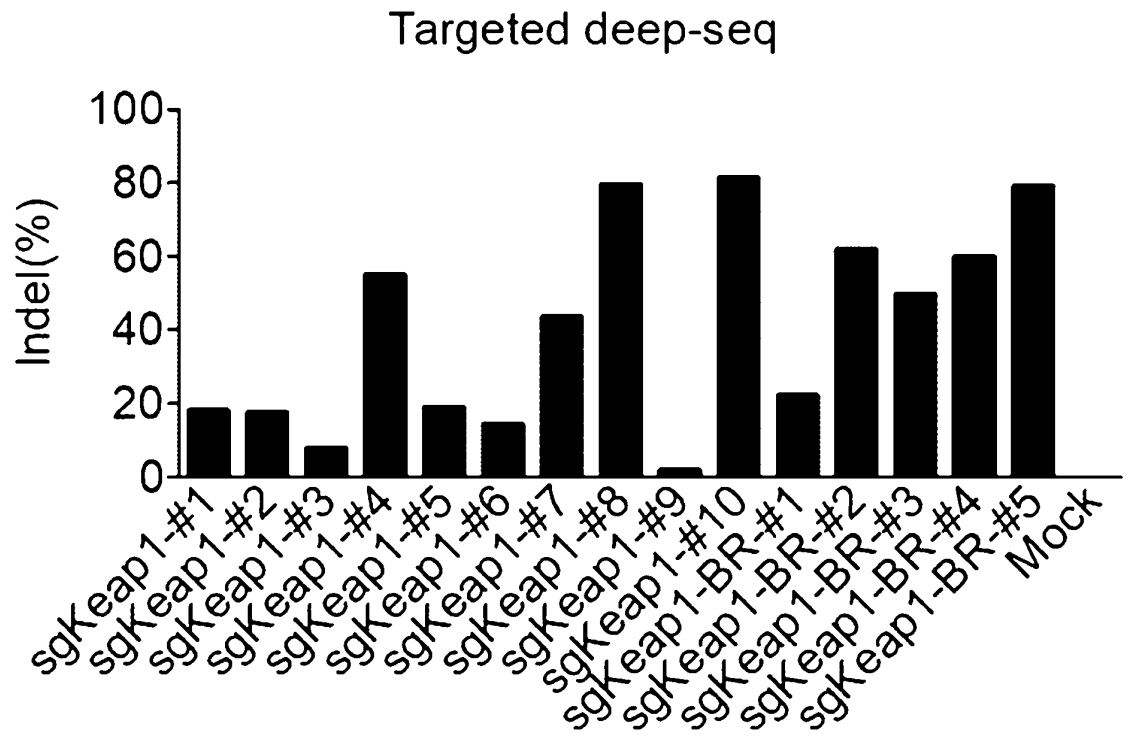
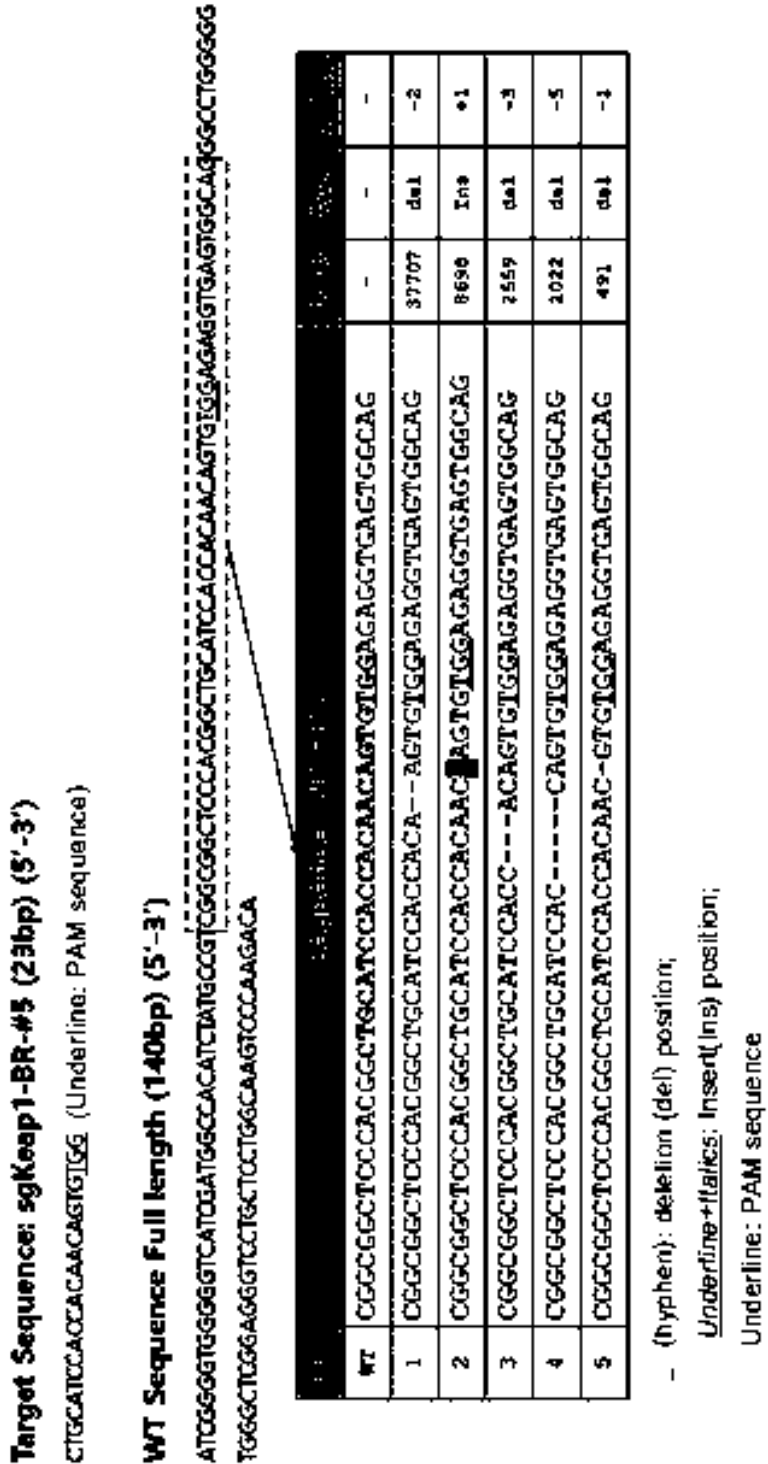


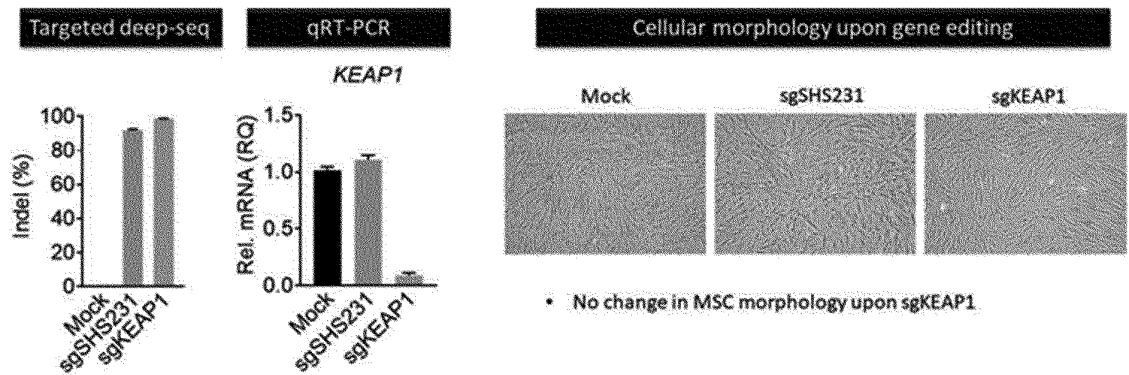
[Fig.1]



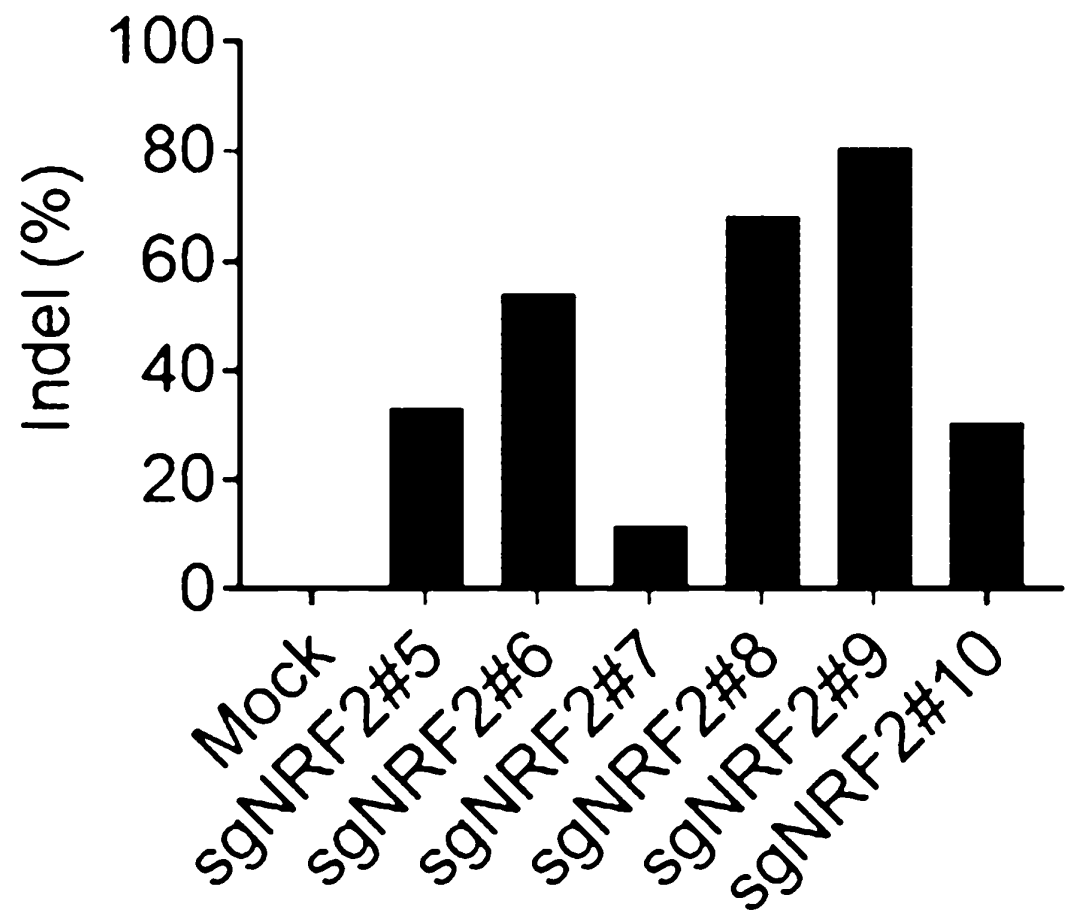
[Fig.2]



[Fig.3]

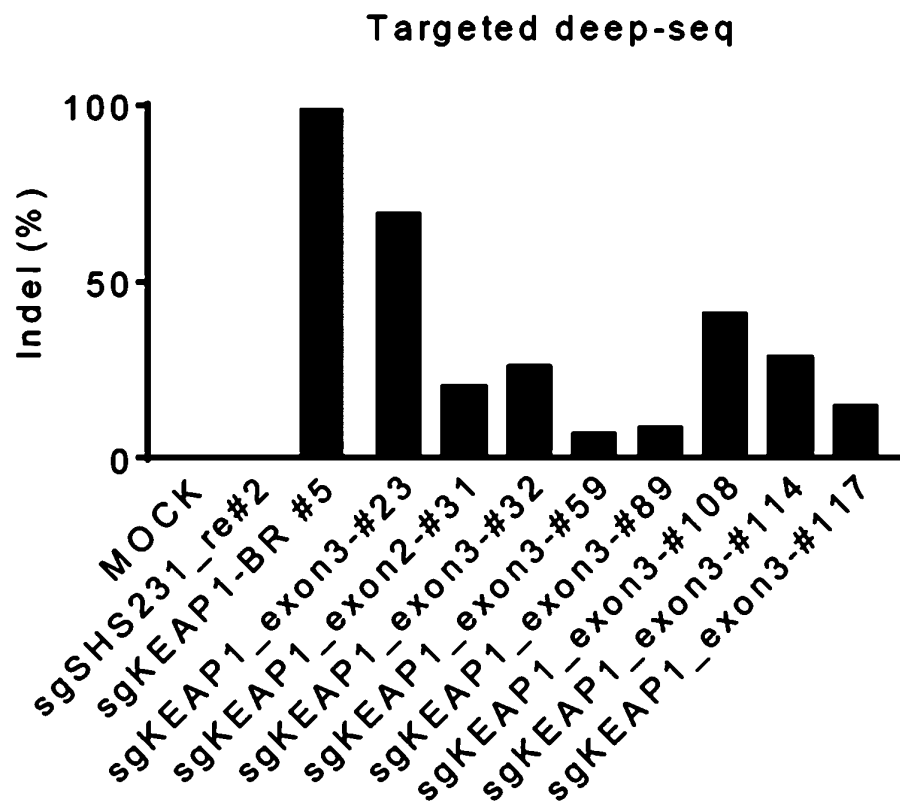


[Fig.4]



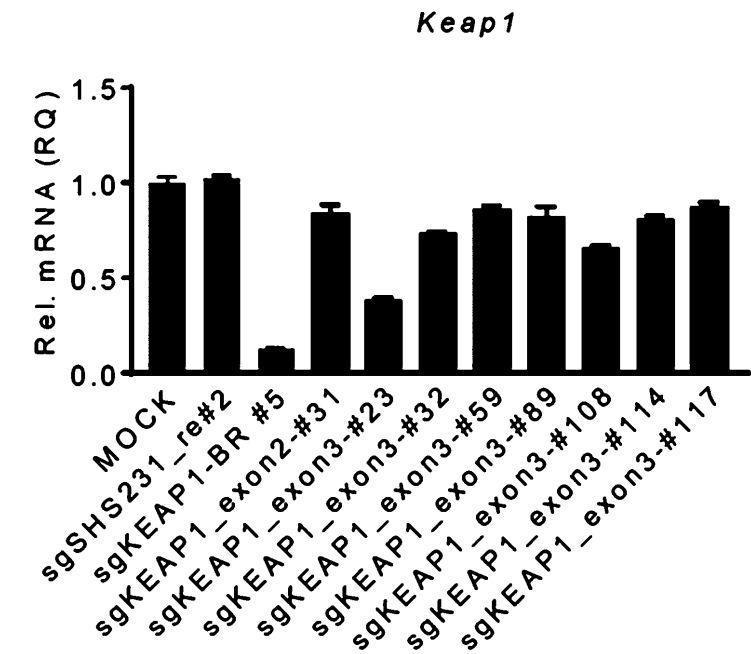
[Fig.5]

## Indel (p6)

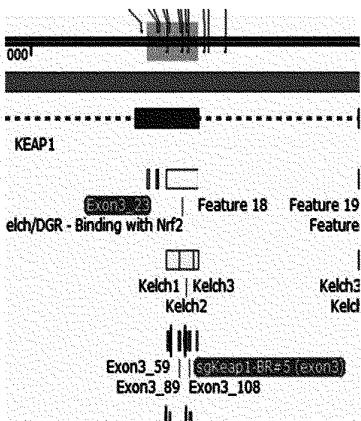


[Fig.6]

qRT-PCR



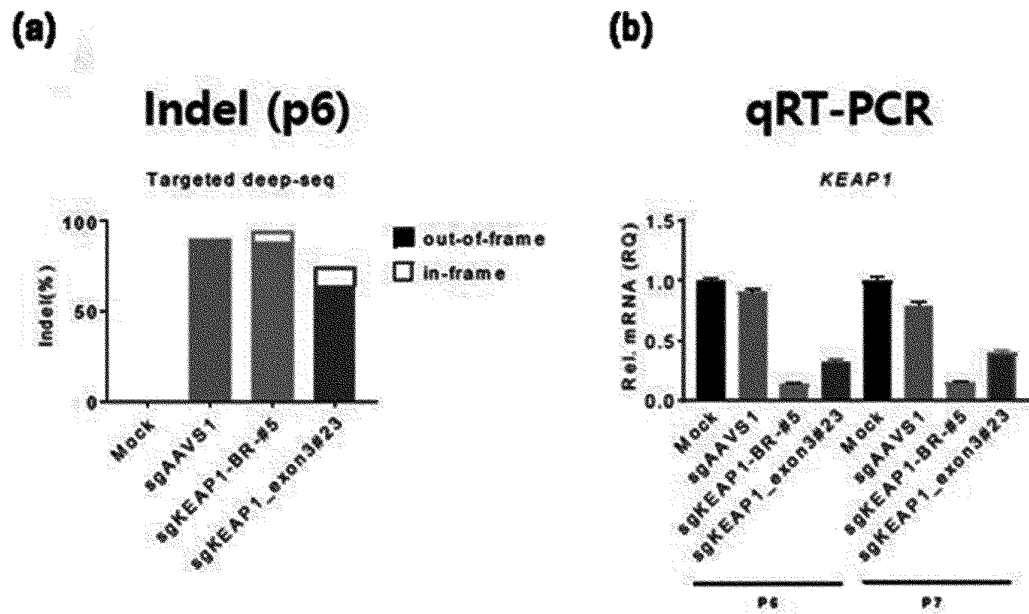
[Fig.7]



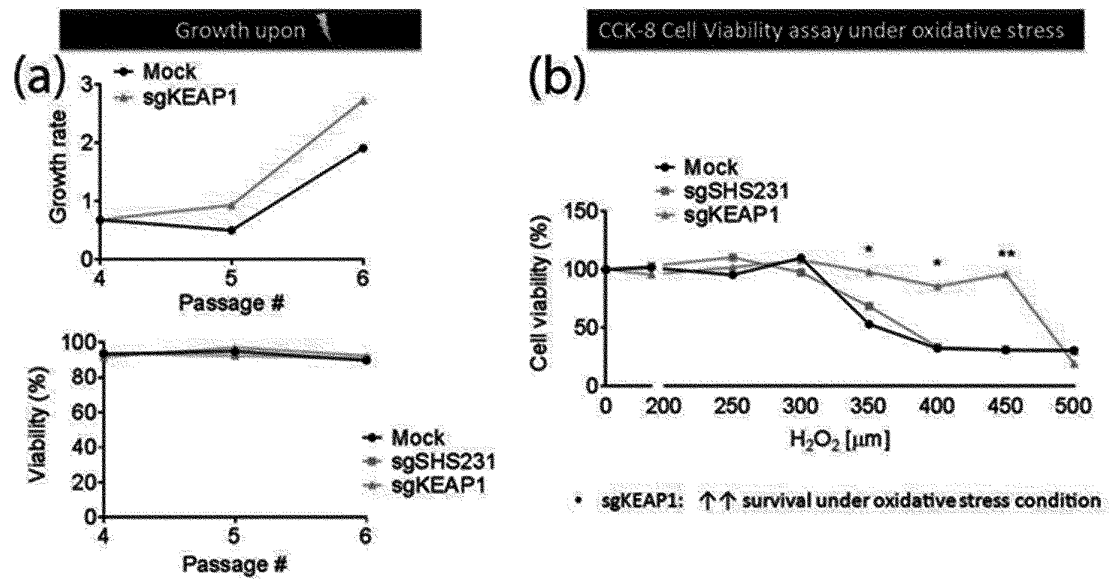
Target sequence (without PAM)

|                  |                      |
|------------------|----------------------|
| sgKeap1-BR-#5    | ctgcatccaccacaacagtg |
| sgKeap1_exon3#23 | ACAGCGACGGTTCTACGTCC |

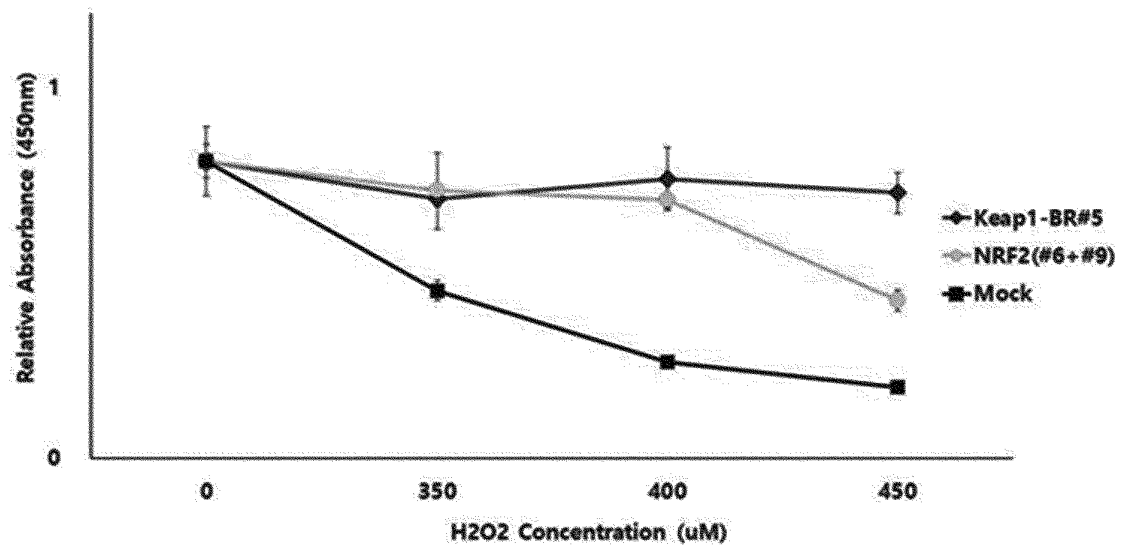
[Fig.8]



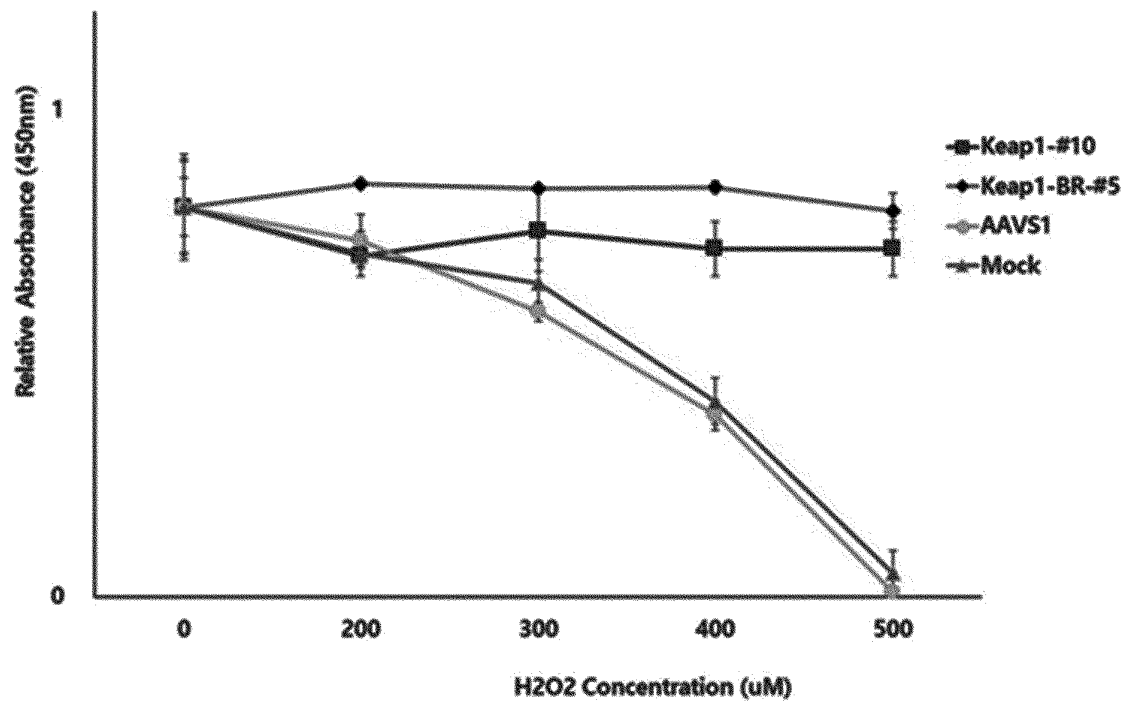
[Fig.9]



[Fig.10]

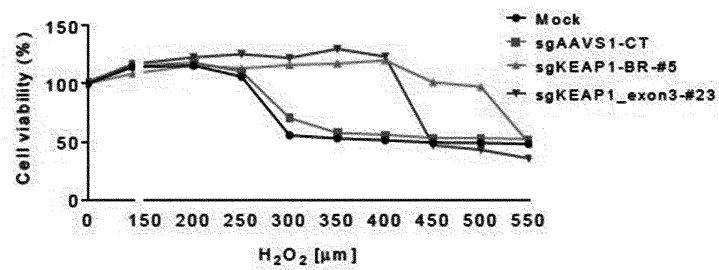


[Fig.11]



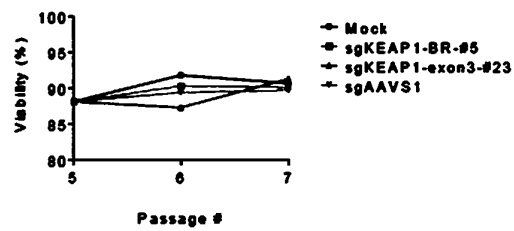
[Fig.12]

## P7, CCK8 assay

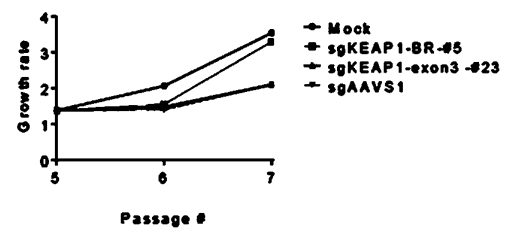


[Fig.13]

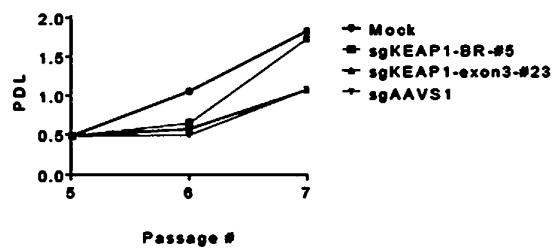
(a)



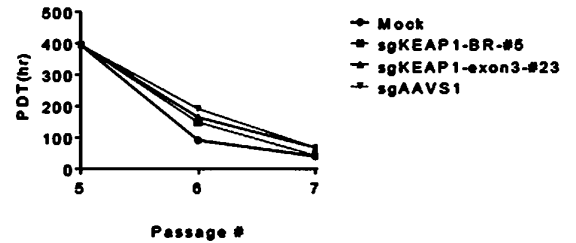
(b)



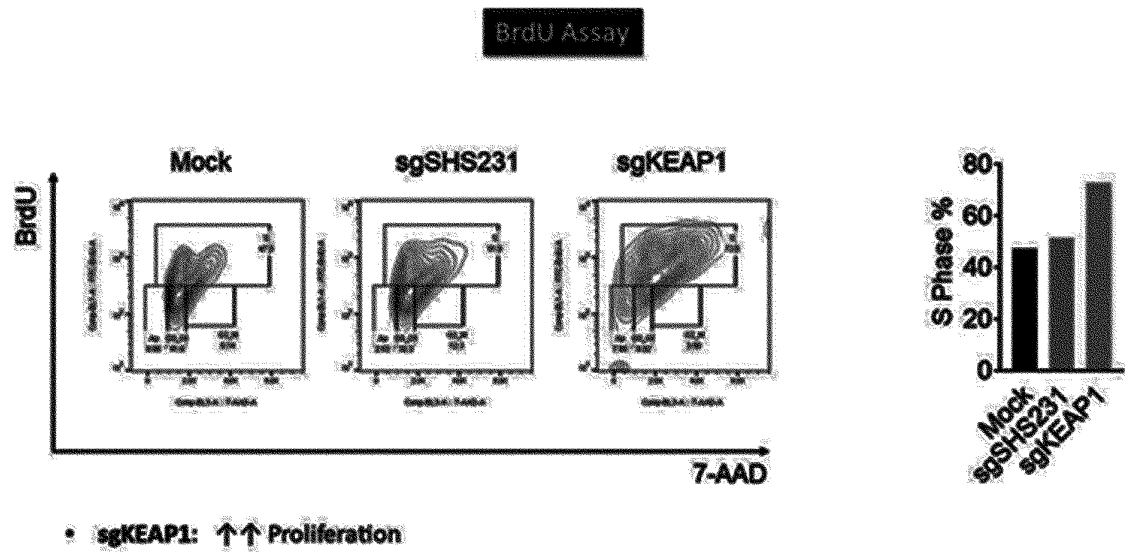
(c)



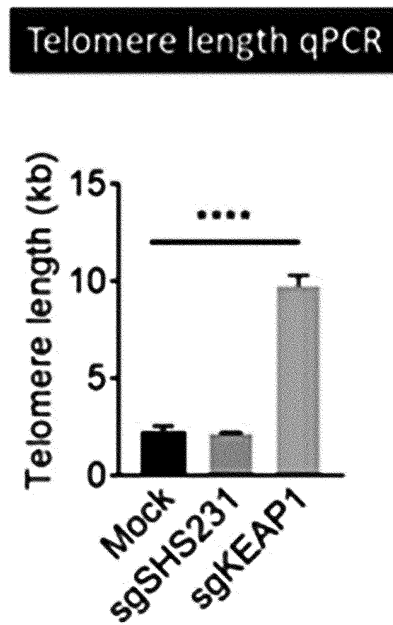
(d)



[Fig.14]

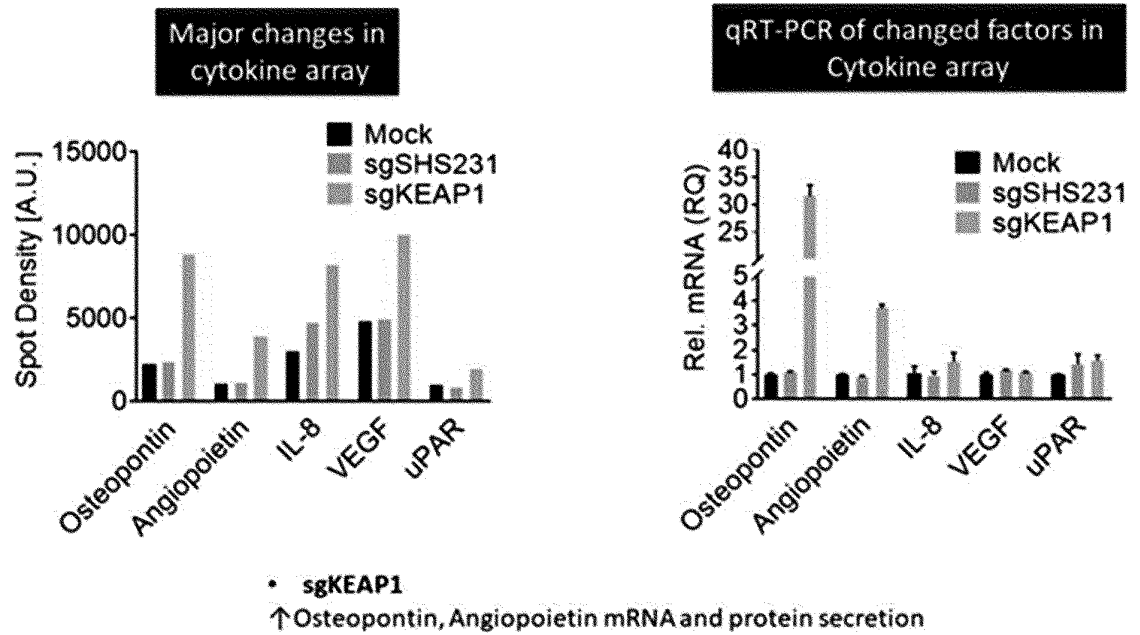


[Fig.15]



- **sgKEAP1 showed elongation of telomere length**

[Fig.16]



[Fig.17]

