

**Claims**

1. A vector capable of expressing a peptide in a cell for preventing damage of DNA in a nucleus of the cell comprising a polynucleotide sequence as setting forth in SEQ ID No. 1 or SEQ  
5 ID No. 2 encoding for the peptide.
2. A method for rejuvenating DNA and/or preventing DNA damage within a nucleus of a cell comprising:  
transfecting the cell with a reagent comprising a peptide as setting forth in SEQ ID No. 3 and/or a  
10 vector containing a polynucleotide sequence as setting forth in SEQ ID No. 1 or SEQ ID No. 2  
encoding for the peptide into the cell, the vector being configured to express the encoded peptide  
within the cell subsequent to the transfecting step,  
wherein the encoded peptides form one or more complexes, within the cell, capable of  
rejuvenating DNA and/or preventing damage of DNA in the nucleus of the cell.  
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3. The method of claim 2 further comprising overexpressing the peptide encoded by the polynucleotide sequence resided in the transfected vector.
4. The method of claim 2, wherein the prevention of DNA damage is obtained by way of  
20 reducing DNA damage response.
5. The method of claim 2, wherein the prevention of DNA damage is obtained by way of increasing cellular resistance against DNA damaging agent.
- 25 6. A method for improving healing of wounded tissue of a subject comprising  
bringing a reagent comprising a peptide as setting forth in SEQ ID No. 3 and/or a vector  
containing a polynucleotide sequence as setting forth in SEQ ID No. 1 encoding for the peptide  
into contact with the wounded tissue consisting of multiple cells; and  
transfecting the cells of the wounded tissues with the peptide and/or the vector, the vector being  
30 configured to express the encoded peptide within the cell subsequent to the transfecting step,  
wherein the encoded peptides form one or more complexes, within the cell, capable of improving  
healing of the wounded tissue by way of enhancing growth of the cells.

7. The method of claim 6, wherein the subject is a diabetes mellitus patient.
8. The method of claim 6, wherein the wounded tissue is resulted by burn injury.
- 5 9. A pharmaceutical composition for rejuvenating DNA and/or reducing DNA damage in a mammal cell comprising
- a biological component being one of (i) a vector comprising an expressible polynucleotide sequence as setting forth in SEQ ID No. 1 or SEQ ID No. 2 encoding for a peptide or (ii) a peptide as setting forth in SEQ ID No. 3; and
- 10 a carrier system being chemically linked to the biological component to facilitate entering of the biological component into the cell upon bringing the composition into contact with the cell, wherein carrier system is a cell-penetrating peptide or nanoemulsion.

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