Claims

[Claim 1] A pharmaceutical composition for preventing or treating pulmonary diseases, comprising:

at least one selected from the group consisting of HAPLN1 (hyaluronan and proteoglycan link protein 1) protein, a gene coding for the HAPLN1 protein, and an effective agent for promoting the expression or activating the functions of HAPLN1 protein or gene as an active ingredient.

[Claim 2] The pharmaceutical composition for preventing or treating pulmonary diseases of claim 1,

wherein the HAPLN1 protein comprises an amino acid sequence having at least 95% sequence identity with SEQ ID NO:1.

[Claim 3] The pharmaceutical composition for preventing or treating pulmonary diseases of claim 1 or 2,

wherein the HAPLN1 protein improves alveolar damages caused by aging or elastic reduction.

[Claim 4] The pharmaceutical composition for preventing or treating pulmonary diseases of any one of the preceding claims,

wherein the pulmonary diseases are one or more selected from the group consisting of chronic bronchitis, asthma, emphysema, and chronic obstructive pulmonary disease (COPD).

[Claim 5] A health functional food composition for improving or preventing pulmonary diseases, comprising:

at least one selected from the group consisting of HAPLN1 (hyaluronan and proteoglycan link protein 1) protein, a gene coding for the HAPLN1 protein, and an effective agent for promoting the expression or activating the functions of HAPLN1 protein or gene as an active ingredient.

[Claim 6] The health functional food composition for improving or preventing pulmonary diseases of claim 5,

wherein the HAPLN1 protein improves alveolar damages caused by aging or elastic reduction.

[Claim 7] The health functional food composition for improving or preventing pulmonary diseases of claim 5 or 6,

wherein the pulmonary diseases are one or more selected from the group consisting of chronic bronchitis, asthma, emphysema, and chronic obstructive pulmonary disease (COPD).

[Claim 8] Use of the pharmaceutical composition of claim 1 or 2 in the manufacture of a medicament for preventing or treating pulmonary diseases.

[Claim 9] The use of claim 8,

wherein the HAPLN1 protein improves alveolar damages caused by aging or elastic reduction.

[Claim 10] The use of claim 8,

wherein the pulmonary diseases are one or more selected from the group consisting of chronic bronchitis, asthma, emphysema, and chronic obstructive pulmonary disease (COPD).

[Claim 11] A pharmaceutical composition for use in preventing or treating pulmonary diseases, comprising:

at least one selected from the group consisting of HAPLN1 (hyaluronan and proteoglycan link protein 1) protein, a gene coding for the HAPLN1 protein, and an effective agent for promoting the expression or activating the functions of HAPLN1 protein or gene as an active ingredient.

[Claim 12] The pharmaceutical composition for use according to claim 11,

wherein the HAPLN1 protein comprises an amino acid sequence having at least 95% sequence identity with SEQ ID NO:1.

[Claim 13] The pharmaceutical composition for use according to claim 11 or 12,

wherein the HAPLN1 protein improves alveolar damages caused by aging or elastic reduction.

[Claim 14] The pharmaceutical composition for use according to any one of claims 11 to 13,

wherein the pulmonary diseases are one or more selected from the group consisting of chronic bronchitis, asthma, emphysema, and chronic obstructive pulmonary disease (COPD).