CLAIMS

[Claim 1]

A polydimethylsiloxane substrate to which a peptide having an affinity for polydimethylsiloxane is bound,

the peptide being the following peptide (1a) or (1b):

(1a) a peptide consisting of an amino acid sequence represented by at least one member selected from the group consisting of SEQ ID NOs: 1 to 9; and

(1b) a peptide consisting of the amino acid sequence of (1a) in which one to three amino acids are deleted, substituted, and/or added, the peptide having an affinity for polydimethylsiloxane.

[Claim 2]

The polydimethylsiloxane substrate according to claim 1, on which a target protein is immobilized via the peptide having an affinity for polydimethylsiloxane.

[Claim 3]

A method for immobilizing a target protein on a polydimethylsiloxane substrate, the method comprising the step of bringing a peptide having an affinity for polydimethylsiloxane into contact with the polydimethylsiloxane substrate,

wherein the peptide is incorporated in the target protein, and

the peptide being the following peptide (1a) or (1b):

(1a) a peptide consisting of an amino acid sequence represented by at least one member selected from the group consisting of SEQ ID NOs: 1 to 9; and

(1b) a peptide consisting of the amino acid sequence of (1a) in which one to three amino acids are deleted, substituted, and/or added, the peptide having an affinity for polydimethylsiloxane.

[Claim 4]

A method for immobilizing a target protein on a

polydimethylsiloxane substrate, the method comprising the step of binding the peptide having an affinity for polydimethylsiloxane bound to the polydimethylsiloxane substrate according to claim 1 to the target protein.

[Claim 5]

A composition for immobilizing a target protein on a polydimethylsiloxane substrate, the composition comprising a peptide having an affinity for polydimethylsiloxane, the peptide being the following peptide (1a) or (1b):

(1a) a peptide consisting of an amino acid sequence represented by at least one member selected from the group consisting of SEQ ID NOs: 1 to 9; and

(1b) a peptide consisting of the amino acid sequence of (1a) in which one to three amino acids are deleted, substituted, and/or added, the peptide having an affinity for polydimethylsiloxane.

[Claim 6]

Use of a peptide having an affinity for polydimethylsiloxane in immobilizing a target protein on a polydimethylsiloxane substrate, the peptide being the following peptide (1a) or (1b):

(1a) a peptide consisting of an amino acid sequence represented by at least one member selected from the group consisting of SEQ ID NOs: 1 to 9; and

(1b) a peptide consisting of the amino acid sequence of (1a) in which one to three amino acids are deleted, substituted, and/or added, the peptide having an affinity for polydimethylsiloxane.

[Claim 7]

A peptide having an affinity for polydimethylsiloxane, the peptide being the following peptide (1c) or (1d):

(1c) a peptide consisting of an amino acid sequence

represented by at least one member selected from the group consisting of SEQ ID NOs: 2 to 9; and

(1d) a peptide consisting of an amino acid sequence represented by at least one member selected from the group consisting of SEQ ID NOs: 1 to 9 in which one to three amino acids are deleted, substituted, and/or added, the peptide having an affinity for polydimethylsiloxane.

[Claim 8]

A polynucleotide encoding the peptide having an affinity for polydimethylsiloxane according to claim 7.

[Claim 9]

The polynucleotide according to claim 8, which is represented by at least one member selected from the group consisting of SEQ ID NOs: 10 to 18.

[Claim 10]

A vector for expressing a peptide having an affinity for polydimethylsiloxane, the vector comprising the polynucleotide according to claim 8 or 9.

[Claim 11]

A vector for expressing a peptide fusion protein,

the peptide fusion protein comprising the peptide having an affinity for polydimethylsiloxane according to claim 7 and a target protein,

the vector comprising the polynucleotide according to claim 8 or 9 and a polynucleotide encoding the target protein, wherein the polynucleotide according to claim 8 or 9 is linked to the polynucleotide encoding the target protein.

[Claim 12]

A transformant obtainable by introducing the vector according to claim 11 into a host cell to transform the host cell.

[Claim 13]

A peptide fusion protein comprising the peptide having an affinity for polydimethylsiloxane according to claim 7 and a target protein, the peptide fusion protein being obtainable from the transformant according to claim 12.

[Claim 14]

A linker for immobilizing a target protein on a polydimethylsiloxane substrate, the linker comprising the peptide having an affinity for polydimethylsiloxane according to claim 7.