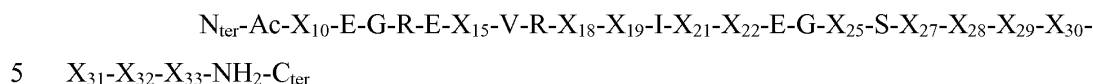


**CLAIMS**

1. A peptide having the following formula (I):



wherein:

N<sub>ter</sub> represents the N-terminal end of the peptide;

C<sub>ter</sub> represents the C-terminal end of the peptide;

Ac represents acetyl group;

10 X<sub>10</sub> represents an amino acid selected from the group consisting of leucine, 2-amino-isobutyric acid, Nε-acetyl-lysine and α-methyl-leucine;

E represents glutamic acid;

G represents glycine;

R represents arginine;

15 X<sub>15</sub> represents an amino acid selected from the group consisting of lysine, arginine, homolysine, homoarginine, ornithine, glutamine, phenylalanine and leucine;

V represents valine;

X<sub>18</sub> represents an amino acid selected from the group consisting of alanine, 2-amino-isobutyric acid, leucine, Nε-acetyl-lysine and glutamine;

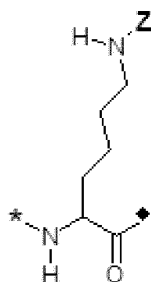
20 X<sub>19</sub> represents an amino acid selected from the group consisting of lysine, Nε-acetyl-lysine, citruline, glutamine, alanine and 2-amino-isobutyric acid;

I represents isoleucine;

X<sub>21</sub> represents an amino acid selected from the group consisting of 2-amino-isobutyric acid and alanine;

25 X<sub>22</sub> represents an amino acid selected from the group consisting of 2-amino-isobutyric acid and isoleucine;

X<sub>25</sub> represents the following structure:

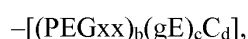


in which:

-\* represents a covalent bond with the glycine preceding  $X_{25}$  in formula (I);

-◆ represents a covalent bond with the serine following  $X_{25}$  in formula (I); and

5 Z represents a group of formula (II):



b and c independently represent 1, 2, 3, 4 or 5;

PEG<sub>xx</sub> independently represents a polyethylene glycol derivative selected from the group consisting of PEG<sub>2</sub>, PEG<sub>2</sub>DGA, and TTDS;

10 gE represents gamma-glutamic acid; and

$\text{C}_d$  represents a linear saturated  $\text{C}_{12}$ - $\text{C}_{22}$  acyl group;

S represents serine;

$X_{27}$  represents an amino acid selected from the group consisting of threonine, lysine, arginine and glutamine;

15  $X_{28}$  represents an amino acid selected from the group consisting of tryptophan, phenylalanine, 5-fluoro-tryptophan, 5-chloro-tryptophan, 5-methoxy-tryptophan, tyrosine, 4-fluoro-phenylalanine, 1-naphtylalanine, 2-naphtylalanine,  $\alpha$ -methyl-tryptophane,  $\alpha$ -methyl-phenylalanine and 5-hydroxy-tryptophane;

$X_{29}$  represents an amino acid selected from the group consisting of serine, D-serine,

20 2-amino-isobutyric acid, threonine,  $\alpha$ -methyl-serine, N $\epsilon$ -acetyl-lysine and valine;

$X_{30}$  represents an amino acid selected from the group consisting of 2-amino-isobutyric acid,  $\alpha$ -methyl-lysine, D-lysine, lysine, homolysine, ornithine, arginine and  $\alpha$ -methyl-arginine;

$X_{31}$  represents an amino acid selected from the group consisting of arginine, N $\omega$ -methyl-

25 arginine, alanine, N $\omega$ ,N $\omega'$ -dimethyl-arginine and citruline;

$X_{32}$  represents an amino acid selected from the group consisting of lysine, alanine, arginine, N $\epsilon$ -acetyl-lysine and N $\epsilon$ ,N $\epsilon$ ,N $\epsilon$ -tri-methyl-lysine; and

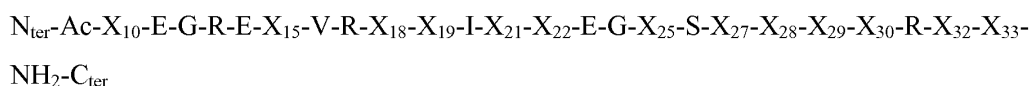
X<sub>33</sub> represents an amino acid selected from lysine, Nε-acetyl-lysine, leucine, arginine and alanine;

or a salt or solvate thereof.

2. A peptide according to claim 1, wherein b represents 2, 3, 4 or 5 and c represents 2, 3 or 4.

3. A peptide according to claim 1 or 2, wherein C<sub>d</sub> represents a linear saturated acyl group selected from the group consisting of C<sub>12</sub> (Lau), C<sub>14</sub> (Myr), C<sub>15</sub> (Penta), C<sub>16</sub> (Palm), C<sub>17</sub> (Hepta), C<sub>18</sub> (Stea), C<sub>20</sub> (Eico) and C<sub>22</sub> (Doco) acyl group, in particular a linear saturated acyl group selected from the group consisting of C<sub>12</sub> (Lau), C<sub>14</sub> (Myr), C<sub>15</sub> (Penta), C<sub>16</sub> (Palm), C<sub>17</sub> (Hepta) or C<sub>18</sub> (Stea) acyl group, and particularly a linear C<sub>16</sub> or C<sub>18</sub> acyl group.

4. A peptide according to any one of claims 1 to 3 having the following formula (Ib):



15 wherein:

N<sub>ter</sub> represents the N-terminal end of the peptide;

C<sub>ter</sub> represents the C-terminal end of the peptide;

Ac represents acetyl group;

20 X<sub>10</sub> represents an amino acid selected from the group consisting of leucine, Nε-acetyl-lysine and 2-amino-isobutyric acid;

E represents glutamic acid;

G represents glycine;

R represents arginine;

25 X<sub>15</sub> represents an amino acid selected from the group consisting of lysine, arginine, homolysine, glutamine, phenylalanine and leucine;

V represents valine;

X<sub>18</sub> represents an amino acid selected from the group consisting of alanine, 2-amino-isobutyric acid and Nε-acetyl-lysine;

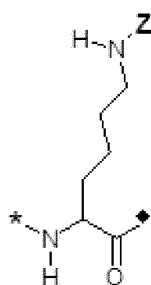
X<sub>19</sub> represents an amino acid selected from the group consisting of lysine, Nε-acetyl-lysine, glutamine and citruline;

I represents isoleucine;

X<sub>21</sub> represents an amino acid selected from the group consisting of 2-amino-isobutyric acid  
5 and alanine;

X<sub>22</sub> represents an amino acid selected from the group consisting of 2-amino-isobutyric acid and isoleucine;

X<sub>25</sub> represents the following structure:



10 in which:

- \* represents a covalent bond with the glycine preceding X<sub>25</sub> in formula (Ia);

- ◆ represents a covalent bond with the serine following X<sub>25</sub> in formula (Ia); and

Z is selected from the group consisting of a -(TTDS)<sub>2</sub>-(gE)<sub>3</sub>-Palm, -(TTDS)<sub>3</sub>-(gE)<sub>3</sub>-Palm, -(PEG<sub>2</sub>DGA)<sub>3</sub>-(gE)<sub>3</sub>-Palm, -(PEG<sub>2</sub>)<sub>4</sub>-(gE)<sub>3</sub>-Palm, -(TTDS)<sub>2</sub>-(gE)<sub>2</sub>-Palm,  
15 -(TTDS)<sub>2</sub>-(gE)<sub>3</sub>-Stea, -(TTDS)<sub>3</sub>-(gE)<sub>3</sub>-Stea, -(PEG<sub>2</sub>DGA)<sub>3</sub>-(gE)<sub>3</sub>-Stea, -(PEG<sub>2</sub>DGA)<sub>3</sub>-(gE)<sub>4</sub>-Stea, -(PEG<sub>2</sub>)<sub>3</sub>-(gE)<sub>3</sub>-Palm, -(PEG<sub>2</sub>)<sub>4</sub>-(gE)<sub>3</sub>-Stea, -(PEG<sub>2</sub>)<sub>5</sub>-(gE)<sub>3</sub>-Palm, -(PEG<sub>2</sub>)<sub>5</sub>-(gE)<sub>4</sub>-Palm, -(TTDS)<sub>3</sub>-(gE)<sub>4</sub>-Stea, -(TTDS)<sub>2</sub>-(gE)<sub>4</sub>-Palm, -(TTDS)<sub>3</sub>-(gE)<sub>2</sub>-Stea, -(TTDS)<sub>2</sub>-(gE)<sub>4</sub>-Stea, -(TTDS)<sub>4</sub>-(gE)<sub>3</sub>-Stea, -(TTDS)<sub>3</sub>-(gE)<sub>4</sub>-Palm, -(TTDS)<sub>4</sub>-(gE)<sub>3</sub>-Palm, -(TTDS)<sub>3</sub>-(gE)<sub>3</sub>-Myr and -(TTDS)<sub>3</sub>-(gE)<sub>4</sub>-Myr wherein

20 gE represents gamma-glutamic acid

Palm represents Palmitoyl and

Stea represents Stearoyl;

S represents serine;

X<sub>27</sub> represents an amino acid selected from the group consisting of threonine, glutamine,

25 arginine and lysine;

X<sub>28</sub> represents an amino acid selected from the group consisting of tryptophan, phenylalanine, 5-Chlorotryptophan,  $\alpha$ -Methyl-phenylalanine, 4-Fluoro-phenylalanine and 5-Fluorotryptophan;

X<sub>29</sub> represents an amino acid selected from the group consisting of serine, D-serine,

- 5 2-amino-isobutyric acid, N $\epsilon$ -acetyl-lysine, threonine and valine ;

X<sub>30</sub> represents an amino acid selected from the group consisting of 2-amino-isobutyric acid,  $\alpha$ -methyl-lysine, D-lysine, lysine, homolysine and arginine;

X<sub>32</sub> represents an amino acid selected from the group consisting of lysine, alanine, arginine and N $\epsilon$ -acetyl-lysine; and

- 10 X<sub>33</sub> represents an amino acid selected from lysine, N $\epsilon$ -acetyl-lysine and arginine ;  
or a salt or solvate thereof.

5. A peptide according to any one of claims 1 to 4, wherein it has an amino acid sequence selected from the group consisting of the amino acid sequences of reference SEQ ID NO: 1-97.

- 15 6. A peptide according to any one of claims 1 to 5 of formula (Ib), wherein Z is selected from the group consisting of a -(TTDS)<sub>2</sub>-(gE)<sub>3</sub>-Palm, -(TTDS)<sub>3</sub>-(gE)<sub>3</sub>-Palm, -(PEG<sub>2</sub>DGA)<sub>3</sub>-(gE)<sub>3</sub>-Palm, -(PEG<sub>2</sub>)<sub>4</sub>-(gE)<sub>3</sub>-Palm, -(TTDS)<sub>2</sub>-(gE)<sub>2</sub>-Palm, -(TTDS)<sub>2</sub>-(gE)<sub>3</sub>-Stea, -(TTDS)<sub>3</sub>-(gE)<sub>3</sub>-Stea, -(PEG<sub>2</sub>DGA)<sub>3</sub>-(gE)<sub>3</sub>-Stea, -(PEG<sub>2</sub>)<sub>3</sub>-(gE)<sub>3</sub>-Palm, -(PEG<sub>2</sub>)<sub>4</sub>-(gE)<sub>3</sub>-Stea, -(PEG<sub>2</sub>)<sub>5</sub>-(gE)<sub>3</sub>-Palm, -(TTDS)<sub>3</sub>-(gE)<sub>4</sub>-Stea, -(TTDS)<sub>2</sub>-(gE)<sub>4</sub>-Palm, -(TTDS)<sub>2</sub>-(gE)<sub>4</sub>-Stea, -(TTDS)<sub>4</sub>-(gE)<sub>3</sub>-Stea, -(TTDS)<sub>3</sub>-(gE)<sub>4</sub>-Palm, -(TTDS)<sub>4</sub>-(gE)<sub>3</sub>-Palm, -(TTDS)<sub>3</sub>-(gE)<sub>3</sub>-Myr and -(TTDS)<sub>3</sub>-(gE)<sub>4</sub>-Myr.
- 20

7. A peptide according to any one of claims 1 to 6, having an amino acid sequence selected from the group consisting of SEQ ID NO: 3, 6, 7, 9-12, 20-22, 26, 28, 30-34, 45, 47-49, 51, 54-62, 64, 67-69, 71-86, 91, 93, and 96.

- 25 8. A peptide according to any one of claims 1 to 7, having an amino acid sequence selected from the group consisting of SEQ ID NO: 3, 6, 7, 20, 26, 30-34, 45, 48, 49, 51, 54-61, 67, 71, 73, 75-79, 81, 83-92 and 97.

9. A peptide according to any one of claims 1 to 8, wherein it has an amino acid sequence selected from the group consisting of the amino acid sequences of reference SEQ ID NO: 3, SEQ ID NO: 6, SEQ ID NO: 7 and SEQ ID NO: 20.
10. A peptide according to any one of claims 1 to 9, wherein it has the amino acid  
5 sequence of reference SEQ ID NO: 3.
11. A pharmaceutical composition comprising at least one peptide according to any one of claims 1 to 10, or a pharmaceutically acceptable salt or solvate thereof, together with at least one pharmaceutically acceptable carrier.
12. A peptide according to any one of claims 1 to 10, a pharmaceutically acceptable salt or  
10 solvate thereof, or a pharmaceutical composition according to claim 11, for its use as a medicament.
13. A peptide according to any one of claims 1 to 10, a pharmaceutically acceptable salt or solvate thereof, or a pharmaceutical composition according to claim 11, for its use in the treatment and/or prevention of various diseases or conditions implicating RXFP1 receptor.
14. The peptide, pharmaceutically acceptable salt or solvate thereof, or pharmaceutical  
15 composition, for its use according to claim 13, wherein the diseases or conditions are selected from the group consisting of fibrosis; fibrotic diseases, in particular systemic sclerosis, scleroderma and fibromyalgia; idiopathic pulmonary fibrosis; kidney diseases involving fibrosis; pulmonary hypertension and preeclampsia.
15. The peptide, pharmaceutically acceptable salt or solvate thereof, or pharmaceutical  
20 composition, for its use according to claim 13, wherein the diseases or conditions are selected from the group consisting of heart and vascular diseases, in particular from the group consisting of acute or chronic heart failure, systolic or diastolic heart failure, coronary artery disease, atherosclerosis, microvascular angina and cardiovascular  
25 complication of diabetes.
16. The peptide, pharmaceutically acceptable salt or solvate thereof, or pharmaceutical composition, for its use according to claim 13, wherein the diseases or conditions are

selected from the group consisting of renal failures in particular renal dysfunction in cirrhosis; chronic kidney disease and acute kidney injury.