Claims

1- A dimeric molecule comprising two polypeptides selected from the group of:

- a first polypeptide comprising the growth factor-like domain of uPA (GFD domain); and
- a second polypeptide comprising the somatomedin B domain of VN (SMB domain; wherein the two polypeptides are linked one to the other by a molecular scaffold.

2-The dimeric molecule of claim 1, wherein

- the first polypeptide further comprises the SMB domain; and
- the second polypeptide further comprises the GFD domain.

~~1~~3-~~A~~ The dimeric molecule ~~comprising two polypeptides selected from the group of~~according to claim 1 or claim 2 wherein:

- ~~a first polypeptide comprising~~ the growth factor-like domain of uPA (GFD domain) comprises the sequence from aa. 11 to aa. 42 of SEQ ID No. 1, or a polypeptide encoded by the correspondent region from an uPA orthologous gene, or functional mutants or derivatives or analogues thereof; and
- ~~a second polypeptide comprising~~ the somatomedin B domain of VN (SMB domain) comprises the sequence from aa. 5 to aa. 39 of SEQ ID No. 2, or a polypeptide encoded by the correspondent region from a VN orthologous gene, or functional mutants or derivatives or analogues thereof;

wherein the two polypeptides are linked one to the other by a molecular scaffold.

4-The dimeric molecule according to claim 3, wherein:

- the growth factor-like domain of uPA (GFD domain) comprises the sequence from aa. 11 to aa. 42 of SEQ ID No. 1; and
- the somatomedin B domain of VN (SMB domain) comprises the sequence from aa. 5 to aa. 39 of SEQ ID No. 2.

~~2-The dimeric molecule of claim 1, wherein~~

~~- the first polypeptide further comprises the SMB domain from aa. 5 to aa. 39 of SEQ ID No. 2, or a polypeptide encoded by the same region from a VN orthologous gene, or functional mutants or derivatives or analogues thereof; and~~

~~- the second polypeptide further comprises the GFD domain from aa. 11 to aa. 42 of SEQ ID No. 1, or a polypeptide encoded by the same region from an uPA orthologous gene, or functional mutants or derivatives or analogues thereof.~~

~~3~~ 5-The dimeric molecule according to any of previous claims wherein the GFD domain consists ~~essentially~~ of aa. 8 to aa. 48 of SEQ ID No. 1.

46-The dimeric molecule according to any of previous claims wherein the GFD domain consists of aa. 1 to aa. 48 of SEQ ID No. 1.

~~5~~ 7-The dimeric molecule according to any one of previous claims wherein the SMB domain consists of aa. 1 to 41 of SEQ ID No. 2.

86-The dimeric molecule according to any of claims ~~2~~ 3 to ~~5~~ 7 wherein the first and the second polypeptide:

c) comprise a sequence ordered as N-terminal-SMB domain-GFD domain-C-terminal and

d) are linked to the molecular scaffold through their C-terminals.

97-The dimeric molecule according to any of claims ~~2~~ 3 to ~~6~~ 8 wherein the SMB domain and the GFD domain are linked by a first linker peptide.

810- The dimeric molecule according to claim ~~7~~ 9 wherein the first linker peptide consists ~~essentially~~ of the sequence of SEQ ID No. 3.

~~9~~11- The dimeric molecule of according to any of previous claims wherein each of first and second polypeptide are linked to the molecular scaffold by means of a second linker peptide.

~~10~~12- The dimeric molecule of claim ~~9~~ 11 wherein the linker peptide consists ~~essentially~~ of the sequence of SEQ ID No. 4.

~~11~~13- The dimeric molecule of any one of previous claims wherein the molecular scaffold is an immunoglobulin constant region (Fc), a leucine zipper, a chemical or a peptide linker.

~~12~~14- The dimeric molecule of claim ~~11~~ 13 wherein the each of heavy chain constant regions of Fc has ~~essentially~~ the sequence of SEQ ID No. 5.

~~13~~15- The dimeric molecule of claim ~~12~~ 14 consisting ~~essentially~~ of a first monomer of sequence of SEQ ID No. 6, and of a second monomer of sequence of SEQ ID No. 7.

~~14~~16- The dimeric molecule of claim ~~12~~ 14 wherein the first and the second monomer have the sequence of SEQ ID No. 8.

~~15~~17- The dimeric molecule of any one of previous claim for medical use.

~~16~~18- Use of ~~T~~the dimeric molecule of any one of claims 1 to ~~14~~ 16 ~~for use~~in the preparation of a medicament for the ~~as~~ treatment of cancer.

~~17~~19- The dimeric molecule according to any of claims 1 to ~~14~~ 16 being conjugated to a therapeutic agent.

~~18~~20- The dimeric molecule of claim ~~17~~ 19 wherein the therapeutic agent is a radionuclide or a toxin.

~~19~~21- Use of t~~T~~he dimeric molecule of any one of claims 1 to ~~14~~ 16 ~~for use~~ in the preparation of a medicament for use in a diagnostic method.

~~20~~22- The use ~~dimeric molecule~~ of claim ~~19~~ 21 ~~for use~~ in the diagnosis of a uPAR-mediated pathology or tumor.

~~21 - Method of treatment of cancer comprising the administration to a subject in need thereof of a therapeutically effective amount of the dimeric molecule of any one of claims 1-14.~~

~~22~~23- A pharmaceutical composition comprising the dimeric molecule of any one of claims 1 to ~~14~~16 and appropriated diluents or excipients.

~~23~~24- The pharmaceutical composition of claim ~~22~~ 23 further comprising another therapeutic agent.

~~24~~25- The pharmaceutical composition of claim ~~23~~ 24 wherein the therapeutic agent is a radionuclide or a toxin.

~~25~~26- A kit for the diagnosis of a uPAR-mediated pathology or tumor comprising the dimeric molecule of any one of claim 1 to ~~14~~16.