Claims

1. Robo-Fc recombinant protein comprising the extracellular domain of the Robo1 protein or a part of this domain, a linker and an immunoglobulin Fc domain, in which said extracellular domain comes from isoform b of the Robo1 protein, in which the Fc domain comes from human immunoglobulin G4, and comprises the S241P and L248E mutations and in which the lysine located in the C-terminal position is absent.

2. Protein according to Claim 1, in which the extracellular domain of Robo1 comprises the Ig1 and Ig2 immunoglobulin domains.

3. Protein according to Claim 2, in which the extracellular domain of Robo1 has at least 80% identity with the sequence SEQ ID NO.2.

~~4. Protein according to one of the preceding claims, in which the Fc domain comes from human immunoglobulin G4.~~

~~5.~~4. Protein according to any one of Claims 1 to 34, in which the Fc domain contains at least one point mutation aimed at increasing the stability of the protein and/or at eliminating the residual effector activity of the Fc domain and/or at increasing the homogeneity during its production.

~~6. Protein according to Claim 5, in which the Fc domain comprises the S241P and L248E mutations and in which the lysine located in the C-terminal position is absent.~~

~~7.~~5. Protein according to any one of Claims 2 to 4, in which the amino acids Ser20 and Arg21 have been deleted so as to increase the homogeneity during its production.

~~8.~~6. Protein according to any one of Claims 1 to 45, of which the sequence has at least 80% identity with the sequence SEQ ID NO. 4, SEQ ID NO.6 or SEQ ID NO. 24.

7. Protein according to any one of Claims 1 to 6, which is produced by transfection of expression plasmids encoding a protein having for sequence SEQ ID NO. 4, SEQ ID NO.6 or SEQ ID NO. 24 into CHO cell, recovery in the culture supernatant and purification.

~~9.~~8. Nucleic acid molecule encoding one of the proteins as defined in Claims 1 to ~~8~~7.

~~10.~~9. Nucleic acid molecule corresponding to the sequence ~~SEQ ID NO.1,~~ SEQ

ID NO.3, SEQ ID NO.5 or SEQ ID NO.23 or having at least 80% identity with the molecules having the sequence ~~SEQ ID NO.1,~~ SEQ ID NO.3, SEQ ID NO.5 or SEQ ID NO.23.

~~11.~~**10.** Robo1-Fc recombinant protein according to any one of Claims 1 to ~~7~~8, for use as a medicament.

~~12.~~**11.** Protein for use according to Claim ~~11~~ 10 in the treatment of diseases in which a protein of the Slit family is overexpressed.

~~13.~~**12.** Protein for use according to Claim ~~11~~ 10 for treating cancer.

13. Protein for use according to Claim 12, for treating liver cancer.

14. Protein for use according to ~~either~~ any one of Claims ~~12~~ 11 ~~and~~ to 13, which does not inhibit endothelial cell proliferation.

15. Protein for use according to Claim ~~13~~ 12 for treating lung cancer or lung metastases.

16. Protein for use according to any one of Claims ~~11~~ 10 to 15, this protein deriving from isoform b of the Robo1 protein.

17. Protein for use according to Claim 16, this protein being as defined in Claims 2 to ~~8~~7.

18. Pharmaceutical composition comprising a Robo1-Fc recombinant protein as defined in Claims 1 to ~~8~~ 7 and at least one excipient.

~~**19.** Use of a Robo1-Fc molecule according to the invention as a diagnostic tool for detecting the overexpression of a molecule of the Slit family in a patient.~~