# Claims

1. A fusion protein comprising:

domain (a) which is the functional fragment of soluble hTRAIL protein sequence, ~~which~~ wherein said functional fragment is capable of inducing apoptotic signal and begins with an amino acid at a position not lower than hTRAIL95, or a sequence having at least 70% homology thereto; and

domain (b) which is the sequence of a pro-apoptotic effector peptide, which effects its pro-apoptotic action via intrinsic apoptosis pathway, wherein the sequence of domain (b) is attached at the C-terminus and/or the N-terminus of domain (a).

2. The fusion protein according to claim 1 wherein domain (a) is the fragment of soluble hTRAIL protein sequence, which fragment begins with an amino acid from the range hTRAIL95 to hTRAIL121, inclusive, and ends with the amino acid hTRAIL281.

3. The fusion protein according to claim ~~1 or~~ 2, wherein domain (a) is selected from the group consisting of hTRAIL114-281 (SEQ. No. 27), hTRAIL119-281 (SEQ. No. 28), hTRAIL121-281 (SEQ. No. 29), hTRAIL116-281 and hTRAIL120-281.

4. The fusion protein according to claim 1, wherein domain (a) is the sequence hTRAIL95-281.

5. The fusion protein according to claim~~s~~ 1 ~~to~~ 4, wherein domain (b) is selected from the group consisting of:

- the fragment of BH3 domain of Bax protein of SEQ. No. 30;
- the fragment of Bid protein of SEQ. No. 31;
- ribonuclease A of SEQ. No. 32;
- cytochrome C of SEQ. No. 33;
- granzyme B of SEQ. No. 34;
- the fragment of Nur77 protein of SEQ. No. 35;
- BH3 domain of Bak protein of SEQ. No. 36;
- BH3 domain of PUMA/BBC3 protein of SEQ. No. 37;
- PUMA/BBC3 protein of SEQ. No. 38;