CLAIMS

1. An antibody having specificity for human Nectin-4 characterized in that it has at least one of the following functions:

   i. it binds to the human Nectin-4 of SEQ ID NO:1 with a K_D of less than 10 µg/mL;

   ii. it selectively binds to Nectin-4 in a biological sample in an immunohistochemistry (IHC) assay.

2. The anti-nectin-4 antibody of Claim 1, which competes for binding to Nectin-4 with the reference murine antibody mAb 5A12.2 as obtainable by the hybridoma deposited at the CNCM under deposit number **CNCM I-5407**.

3. The anti-Nectin-4 antibody of any one of claim 1 or 2, which comprises:

   - a HCDR1 of SEQ ID NO:2, a HCDR2 of SEQ ID NO:3, a HCDR3 of SEQ ID NO:4, a LCDR1 of SEQ ID NO:5, a LCDR2 of SEQ ID NO:6 and a LCDR3 of SEQ ID NO:7;

   - a variable heavy chain (VH) domain and a variable light chain domain having at least 90 % identity with the heavy chain and light chain of SEQ ID NO:8 and 9 respectively; and/or

   - a variable heavy chain (VH) domain and a variable light chain of SEQ ID NO:8 and 9 respectively.

4. The anti-Nectin-4 antibody of any one of the preceding claims, which is a human, chimeric or humanized antibody.

5. The anti-Nectin-4 antibody of any one of claims 1-4, which is conjugated to a cytotoxic moiety.

6. A nucleic acid molecule, which encodes a heavy chain and/or a light chain of the anti-Nectin-4 antibody of any one of Claims 1-4.

7. A host cell comprising the nucleic acid of claim 6.

8. The anti-Nectin-4 antibody of any one of claims 1-5, for use in therapy.

9. Use of the anti-Nectin-4 antibody of any one of claims 1-5, in the manufacture of a medicament for treating cancer.

10. The use according to claim 9, wherein cancer is selected from breast cancer, ovarian cancer, bladder, urothelial, pancreatic or lung cancer treatment.

11. The use according to claim 9 or 10, wherein cancer is metastatic cancer.

12. A pharmaceutical composition comprising the anti-Nectin-4 antibody of any one of Claims 1-5, and at least a pharmaceutically acceptable carrier.

13. An *in vitro* method for diagnosing cancer in a subject comprising the detection of the presence or expression level of Nectin-4 in a biological sample wherein the detection is performed by using an anti-Nectin-4 antibody according to any one of claims 1 to 4 in an immunohistochemistry (IHC) assay.

14. An *in vitro* method for determining the eligibility of a subject to a treatment with an anti-Nectin-4 antibody according to any one of claims 1 to 4, wherein the method comprises performing an immunohistochemistry (IHC) assay on a biological sample from said subject using said anti-Nectin-4 antibody.

15. The antibody of claim 1 or the in vitro method of claim 13 or 14, wherein the biological sample section is a fixed tissue, optionally a formalin-fixed paraffin-embedded (FFPE) tissue.

16. Use of anti-cancer therapeutic agent in the manufacture of a medicament for treating a subject suffering from cancer or suspected of suffering from cancer comprising

a step 1) of assessing responsiveness of said cancer patient to an anti-cancer therapeutic agent comprising:

(1a) contacting said tissue sample with the antibody or antigen binding fragment thereof of any one of claims 1-5;

(1b) detecting the binding of said antibody or antigen binding fragment thereof to said tissue sample; and

(1c) determining the expression of Nectin-4 in the tissue sample, wherein the expression level of Nectin-4 in the tissue sample is compared with a reference expression level of Nectin-4; and

a step 2) of said anti-cancer therapeutic agent to be administered to said subject when an increased expression level of Nectin-4 compared to the reference is observed;

optionally wherein, the expression level of Nectin-4 is detected using an immunohistochemistry (IHC) approach, an immunoblotting assay, a fluorescence activated cell sorting (FACS) assay, or an Enzyme-Linked Immunosorbent Assay (ELISA)

optionally wherein, the anti-cancer therapeutic agent comprises an anti-Nectin-4 antibody or an antibody drug conjugate of an anti-Nectin-4 antibody, typically an antibody according to any one of claims 1-5.