

What is claimed is:

1. An antibody or a fragment thereof which binds specifically to a peptide fragment defined by the 861st to 900th amino acid residues of human-derived methionyl-tRNA synthetase (MRS) protein as set forth in SEQ ID NO:1.

2. The antibody or the fragment thereof of claim 1, wherein the antibody or the fragment comprises a heavy chain variable region and a light chain variable region selected from the group consisting of:

the light chain variable region (VL) comprising the light chain complementarity determining region 1 (CDR1) comprising the amino acid sequence as set forth in SEQ ID NO:3, the light chain complementarity determining region 2 (CDR2) comprising the amino acid sequence as set forth in SEQ ID NO:5, and the light chain complementarity determining region 3 (CDR3) comprising the amino acid sequence as set forth in SEQ ID NO:7, and the heavy chain variable region (VH) comprising the heavy chain complementarity determining region 1 (CDR1) comprising an amino acid sequence as set forth in SEQ ID NO:9, the heavy chain complementarity determining region 2 (CDR2) comprising the amino acid sequence as set forth in SEQ ID NO:11, and the heavy chain complementarity determining region 3 (CDR3) comprising the amino acid sequence as set forth in SEQ ID NO:13; and

the light chain variable region (VL) comprising the light chain complementarity determining region 1 (CDR1) comprising the amino acid sequence as set forth in SEQ ID NO:15, the light chain complementarity determining region 2 (CDR2) comprising the amino acid sequence as set forth in SEQ ID NO:17, and the light chain complementarity determining region 3 (CDR3) comprising the amino acid sequence as set forth in SEQ ID NO:19, and the heavy chain variable region (VH) comprising the heavy chain complementarity determining region

1 (CDR1) comprising an amino acid sequence as set forth in SEQ ID NO:21, the heavy chain complementarity determining region 2 (CDR2) comprising the amino acid sequence as set forth in SEQ ID NO:23, and the heavy chain complementarity determining region 3 (CDR3) comprising the amino acid sequence as set forth in SEQ ID NO:25.

3. The antibody or the fragment thereof of claim 2, wherein the antibody or the fragment thereof comprises a light chain variable region comprising an amino acid sequence as set forth in SEQ ID NO:27 and a heavy chain variable region comprising an amino acid sequence as set forth in SEQ ID NO:29; or a light chain variable region comprising an amino acid sequence as set forth in SEQ ID NO:31 and a heavy chain variable region comprising an amino acid sequence as set forth in SEQ ID NO:33.

4. The antibody or the fragment thereof of claim 2, wherein the antibody is selected from the group consisting of IgG, IgA, IgM, IgE and IgD, and the fragment thereof is selected from the group consisting of diabody, Fab, Fab', F(ab)₂, F(ab')₂, Fv and scFv.

5. A polynucleotide encoding the antibody or the fragment thereof of any one of claims 1 to 4.

6. A recombinant expression vector comprising the polynucleotide of claim 5.

7. A cell transformed with the recombinant expression vector of claim 6.

8. A cell expressing the antibody or the fragment thereof of any one of claims 1 to 4.

9. A method for preparing a monoclonal antibody which binds to human-derived methionyl-tRNA synthetase (MRS), the method comprising:

(a) administering the cell of claim 7 or claim 8 into the peritoneum of a mouse;

(b) collecting a peritoneal fluid from the mouse with inflated peritoneum; and

(c) isolating a monoclonal antibody which binds specifically to MRS from the peritoneal fluid.

10. A method for specifically detecting a human-derived methionyl-tRNA synthetase (MRS) protein, the method comprising contacting the antibody or the fragment thereof of claim 1 with a biological sample and detecting the antibody or the fragment thereof.

11. A composition for diagnosis of a cancer comprising the antibody or the fragment thereof of claim 1 as an active ingredient.

12. The composition of claim 11, wherein the cancer is selected from the group consisting of biliary tract cancer, breast cancer, colon cancer, lung cancer, small cell lung cancer, stomach cancer, liver cancer, blood cancer, bone cancer, pancreatic cancer, skin cancer, head or neck cancer, skin or intraocular melanoma, uterine cancer, ovarian cancer, rectal cancer, anal cancer, colon cancer, breast cancer, Fallopian tube carcinoma, endometrial carcinoma, cervical

cancer, vaginal cancer, vulvar carcinoma, Hodgkin's disease, esophageal cancer, small intestine cancer, endocrine gland cancer, thyroid cancer, parathyroid cancer, adrenal cancer, soft tissue sarcoma, urethral cancer, penis cancer, prostate cancer, chronic or acute leukemia, lymphocytic lymphoma, bladder cancer, kidney or ureter cancer, renal cell carcinoma, renal pelvic carcinoma, CNS tumor, primary CNS lymphoma, spinal cord tumor, brainstem glioma and pituitary adenoma.

13. Use of the antibody or the fragment thereof of claim 1 in the preparation of a cancer diagnostic agent.