

			2013/7/3	
			2013/7/24	
			2013/8/21	
	2013/9/2 No lung metastasis	2013/9/6 Lymph node metastasis 9 × 6 mm (shrunk by 59%)	2013/9/4	
			2013/9/18	

[0062]

[Table 6]

History of therapy and examination of patient having ID No. 22				
Primary focus	Thorax	Abdomen	FOLFOX/Bev	Serum test
G12D	2013/2/1 Lung metastasis in 2 points			
			2013/3/15	2013/3/18 KRAS wild
2012/3/25 Colectomy			2013/3/28	
			2013/4/10	
			2001/4/25	
			2013/5/9	
2013/5/25 Hepatectomy	2013/5/25 Disappearance of lung metastasis		2013/5/23	
			2013/6/5	
			2013/6/20	
			2013/7/3	
			2013/7/17	
			2013/7/31	
			2013/8/14	
			2013/8/28	
			2013/9/11	

5 [0063]

From the circulating DNA of the patient having an ID No. 9 that was obtained before the resection of the primary focus, ultimately the same KRAS gene mutation (G12A) as in the primary focus was observed, while G12A was not detected from the circulating DNA of the same patient that was obtained after the resection of the primary focus. However, G12A was then detected from the serum KRAS, and the tumor recurred after 4 months. That is, in conclusion, the efficacy of bevacizumab was

10

CLAIMS:

1. A method for predicting efficacy of a VEGF inhibitor exerted on a tumor of a subject, comprising:

5 determining whether or not an RAS gene-derived nucleic acid is present in a cell-free DNA isolated from a blood sample collected from the subject;

determining whether the RAS gene-derived nucleic acid in the cell-free DNA is a wild type or a mutant;

determining that an antitumor effect resulting from the VEGF inhibitor is highly
10 likely to last for more than a period of time in the subject, in a case where a wild-type RAS gene-derived nucleic acid is detected in the cell-free DNA and a mutant RAS gene-derived nucleic acid is not detected in the cell-free DNA; and

determining that the antitumor effect resulting from the VEGF inhibitor is unlikely to last for more than the period of time in the subject in a case where the
15 mutant RAS gene-derived nucleic acid is detected in the cell-free DNA, regardless of whether an RAS in tumor tissue is a wild type or a mutant.

2. The method for predicting efficacy of a VEGF inhibitor according to Claim 1, wherein

20 the subject has undergone surgical resection of a tumor portion or has been administered with a VEGF inhibitor in the past.

3. The method for predicting efficacy of a VEGF inhibitor according to Claim 1 or 2, wherein

the RAS is KRas, HRas, or NRAS.

4. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 3, wherein

5 the subject has been administered with a drug other than the VEGF inhibitor.

5. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 3, wherein

the subject is a tumor patient who has been administered with the VEGF
10 inhibitor and then received antitumor therapy different from the administration of the VEGF inhibitor, and

the blood sample is collected before the tumor patient is going to be administered again with the VEGF inhibitor.

15 6. The method for predicting efficacy of a VEGF inhibitor according to Claim 5, wherein

the antitumor therapy is medication therapy using a chemotherapy agent.

7. The method for predicting efficacy of a VEGF inhibitor according to
20 Claim 6, wherein

the chemotherapy agent is one or more agents selected from the group consisting of fluorouracil, folinic acid, oxaliplatin, irinotecan, cytarabine, fludarabine, gemcitabine, hydroxyurea, methotrexate, bleomycin, chlorambucil, cisplatin, cyclophosphamide,

doxorubicin, mitoxantrone, camptothecine, topotecan, teniposide, colcemid, colchicine, paclitaxel, vinblastine, vincristine, and tamoxifen.

8. The method for predicting efficacy of a VEGF inhibitor according to
5 Claim 5, wherein
the antitumor therapy is radiotherapy.

9. The method for predicting efficacy of a VEGF inhibitor according to
Claim 5, wherein
10 the antitumor therapy is medication therapy using a molecular-targeted drug
different type from the VEGF inhibitor which has already been administered to the
subject.

10. The method for predicting efficacy of a VEGF inhibitor according to
15 Claim 9, wherein
the molecular-targeted drug is one or more drugs selected from the group
consisting of cetuximab, panitumumab, bevacizumab, gefitinib, erlotinib, regorafenib,
crizotinib, sunitinib, sorafenib, everolimus, trastuzumab, lapatinib, and rituximab.

20 11. The method for predicting efficacy of a VEGF inhibitor according to
Claim 9 or 10, wherein
the antitumor therapy is combined therapy composed of medication therapy
using the molecular-targeted drug and medication therapy using the chemotherapy agent.

12. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 11, wherein
the tumor is a recurrent tumor.

5 13. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 11, wherein
the tumor is a metastatic focus.

14. The method for predicting efficacy of a VEGF inhibitor according to any
10 one of Claims 1 to 11, wherein
the tumor is a primary focus.

15 15. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 14, wherein
the tumor is one or more tumors selected from the group consisting of colorectal cancer, colon cancer, rectal cancer, lung cancer, liver cancer, breast cancer, ovarian cancer, prostatic cancer, renal cancer, esophageal cancer, head and neck cancer, uterine cancer, and cervical cancer.

20 16. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 15, wherein
the tumor is present in a plurality of places in the body of the subject.

17. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 16, wherein

the mutant is one or more mutations selected from the group consisting of G12A, G12C, G12D, G12R, G12S, G12V, G13D, G12S2, G13A, G13S, G13V, G13R, G13C,
5 Q61H, Q61L, Q61R, A146T, and A146V of an RAS protein.

18. The method for predicting efficacy of a VEGF inhibitor according to any one of Claims 1 to 17, wherein

the blood sample is peripheral blood, serum, or plasma.