if one or more FGFR mutants including at least the FGFR2 SNP C383R are present in the sample.

**[0005]** Disclosed herein are methods of treating cholangiocarcinoma in a patient comprising: evaluating a biological sample from the patient for the presence of one or more FGFR mutants including at least the mutation FGFR3 R397C; or one or more FGFR mutants including at least the mutation FGFR3 L608F; or one or more FGFR mutants including at least the fusion FGFR2-TACC2; and treating the patient with an FGFR inhibitor if one or more FGFR mutants as described above are present in the sample.

**[0006]** Disclosed herein are methods of treating cholangiocarcinoma in a patient harboring the FGFR2 SNP C383R, or harboring the fusion FGFR2-BICC1; or harboring the fusion FGFR2-CCAR1; or harboring the fusion FGFR2-KIAA1598; or harboring the fusion DTWD2-FGFR2; or harboring the fusion ESR2-FGFR2; or harboring the fusion FGFR2-MGEA5; or harboring the fusion FGFR2-SBNO2; or harboring the mutation FGFR2 C390>YS; or harboring the mutation FGFR2 N549K; in particular harboring FGFR2 C383R, comprising administering a FGFR inhibitor to said patient. The patient may comprise one or more further FGFR mutants.

**[0007]** Disclosed herein are methods of treating cholangiocarcinoma in a patient harboring the mutation FGFR3 R397C, or harboring the mutation FGFR3 L608F, or harboring the fusion FGFR2-TACC2, comprising administering a FGFR inhibitor to said patient. The patient may comprise one or more further FGFR mutants.

**[0008]** Disclosed herein is a FGFR inhibitor for use in the treatment of cholangiocarcinoma in a patient harboring the FGFR2 SNP C383R, or harboring the fusion FGFR2-BICC1; or harboring the fusion FGFR2-CCAR1; or harboring the fusion FGFR2-KIAA1598; or harboring the fusion DTWD2-FGFR2; or harboring the fusion ESR2-FGFR2; or harboring the fusion FGFR2-MGEA5; or harboring the fusion FGFR2-SBNO2; or harboring the mutation FGFR2 C390>YS; or harboring the mutation FGFR2 N549K; in particular harboring FGFR2 C383R. The patient may comprise one or more further FGFR mutants.

**[0009]** ~~In one aspect, d~~Disclosed herein is a FGFR inhibitor for use in the treatment of cholangiocarcinoma in a patient harboring the mutation FGFR3 R397C, or harboring the mutation FGFR3 L608F, or harboring the fusion FGFR2-TACC2. The patient may comprise one or more further FGFR mutants.

**[0010]** Disclosed herein is the use of a FGFR inhibitor in the manufacture of a medicament for the treatment of cholangiocarcinoma in a patient harboring the FGFR2 SNP C383R, or harboring the fusion FGFR2-BICC1; or harboring the fusion FGFR2-CCAR1; or harboring the fusion FGFR2-KIAA1598; or harboring the fusion DTWD2-FGFR2; or harboring the fusion ESR2-FGFR2; or harboring the fusion FGFR2-MGEA5;

FGFR mutants including at least the mutation FGFR3 L608F; or one or more FGFR mutants including at least the fusion FGFR2-TACC2 is detected. In another aspect, disclosed herein is the use of a FGFR inhibitor in the manufacture of a medicament for the treatment of cholangiocarcinoma in a patient wherein the patient is identified as being responsive to the treatment with the FGFR inhibitor by evaluating a biological sample that had been obtained from the patient for the presence of one or more FGFR mutants including at least the mutation FGFR3 R397C; or one or more FGFR mutants including at least the mutation FGFR3 L608F~~; or one or more FGFR mutants including at least the fusion FGFR2-TACC2~~, wherein the presence of one or more FGFR mutants including at least the mutation FGFR3 R397C; or one or more FGFR mutants including at least the mutation FGFR3 L608F~~; or one or more FGFR mutants including at least the fusion FGFR2-TACC2~~ is detected.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

**[0016]** Reference to a particular numerical value includes at least that particular value, unless the context clearly dictates otherwise. When a range of values is expressed, another embodiment includes from the one particular value and/or to the other particular value. Further, reference to values stated in ranges include each and every value within that range. All ranges are inclusive and combinable.

**[0017]** The following abbreviations are used throughout the specification: FGFR (fibroblast growth factor receptor); FFPET (Formalin-Fixed Paraffin-Embedded Tissue); SNP (single nucleotide polymorphism).

**[0018]** As used herein, “treating” and like terms refer to reducing the severity and/or frequency of cancer symptoms, eliminating cancer symptoms and/or the underlying cause of said symptoms, reducing the frequency or likelihood of cancer symptoms and/or their underlying cause, and improving or remediating damage caused, directly or indirectly, by cancer.

**[0019]** “Biological samples” refers to any sample from a patient in which cancerous cells can be obtained and detection of a FGFR mutant is possible. Suitable biological samples include, but are not limited to, blood, lymph fluid, bone marrow, a solid tumor sample, or any combination thereof. In some embodiments, the biological sample can be FFPET.

CLAIMS

~~1. A FGFR inhibitor for use in the treatment of cholangiocarcinoma in a patient harboring the mutation FGFR3 R397C; or harboring the mutation FGFR3 L608F; or harboring the fusion FGFR2-TACC2.~~

~~2.~~1. Use of a FGFR inhibitor in the manufacture of a medicament for the treatment of cholangiocarcinoma in a patient wherein the patient is identified as being responsive to the treatment with the FGFR inhibitor by evaluating a biological sample that had been obtained from the patient for the presence of one or more FGFR mutants including at least the mutation FGFR3 R397C; or one or more FGFR mutants including at least the mutation FGFR3 L608F~~; or one or more FGFR mutants including at least the fusion FGFR2-TACC2~~, wherein the presence of one or more FGFR mutants including at least the mutation FGFR3 R397C; or one or more FGFR mutants including at least the mutation FGFR3 L608F~~; or one or more FGFR mutants including at least the fusion FGFR2-TACC2~~ is detected.

~~3.~~2. The ~~FGFR inhibitor for use according to claim 1 or the~~ use according to claim ~~2~~ 1 wherein the FGFR inhibitor is erdafitinib.

~~4.~~3. The ~~FGFR inhibitor for use or the~~ use according to claim ~~3~~ 2 wherein the erdafitinib is to be administered at a dose of 8 mg once daily.

~~5.~~4. The ~~FGFR inhibitor for use or the~~ use according to claim ~~3~~ 2 wherein the erdafitinib is to be administered at a dose of 9 mg once daily.

~~6.~~5. The ~~FGFR inhibitor for use or the~~ use according to claim ~~3~~ 2 wherein the erdafitinib is to be administered at a dose of 8 mg, in particular 8 mg once daily, with an option to uptitrate to 9 mg depending on serum phosphate levels (e.g. serum phosphate levels are < 5.5 mg/dL, or are < 7 mg/dL or range from and include 7 mg/dL to ≤9 mg/dL or are ≤9 mg/dL), and depending on treatment-related adverse events observed.

~~7.~~6. The ~~FGFR inhibitor for use or the~~ use according to claim ~~6~~ 5 wherein the levels of serum phosphate for determining whether or not to up-titrate are to be measured on a treatment day during the first cycle of erdafitinib treatment.

~~8.~~7. The ~~FGFR inhibitor for use or the~~ use according to claim 6~~7~~ wherein the levels of serum phosphate for determining whether or not to up-titrate are to be measured on day 14 ± 2 days of ~~the first cycle of~~ erdafitinib ~~treatment~~administration.

~~9.~~8. The ~~FGFR inhibitor for use or the~~ use according to claim ~~8~~ 7 wherein the levels of serum phosphate for determining whether or not to up-titrate are to be measured on day 14 of ~~the first cycle of~~ erdafitinib ~~treatment~~administration.

~~10.~~9. The ~~FGFR inhibitor for use accrding to any one of claims 1 or 3 to 9 or the~~ use according to any one of claims ~~2~~ 1 to ~~9~~ 8 wherein the patient is an Asian patient.