

Claims

1. A method for staging and/or typing of a cancerous disease, said method comprising the following steps:
 - (a) detecting somatic alterations of the DNA of one or more disseminated cancer cell(s) (DCC(s)) obtained from one or more lymph node(s); and
 - (b) determining the somatic evolution of the DCC(s), based on the detected somatic alteration(s) in step (a),wherein the somatic evolution of the DCC(s) is indicative of the stage/type of the cancerous disease and wherein the cancerous disease is melanoma.
2. Use of a pharmaceutical composition in the manufacture of a medicament for the treatment of a cancerous disease in a subject, wherein treatment is to be initiated, continued or discontinued based on the stage/type of said cancerous disease, wherein said stage/type of said cancerous disease is determined by:
 - (a) detecting somatic alterations in the DNA of one or more DCC(S) obtained from one or more lymph node(s) of a subject;
 - (b) determining the somatic evolution of the DCC(s) based on the detected somatic alteration(s) in step (a); and
 - (c) determining the stage/type of the cancerous disease based on the somatic evolution of the DCC(s) determined in step (b)and wherein the cancerous disease is melanoma.
3. The method of claim 1 or the use of claim 2, wherein the DCC(s) are obtained from a sentinel lymph node.
4. The method of claim 1 or 3, or the use of claim 2 or 3, further comprising determination of the DCC density (DCCD), wherein the DCCD is the number of DCCs per million cells in the lymph node used to obtain the DCCs, wherein the DCCD is indicative of the stage/type of the cancerous disease.
5. The method of claim 4, or the use of claim 4, wherein a DCCD of more than 50 to 100 is indicative for the development of metastases.

6. The method of any one of claims 1 and 3-5, or the use of any one of claims 2-5, wherein the somatic alterations comprise at least one of the somatic alterations selected from the group consisting of a *BRAF* mutation, a loss of chromosome 9p11-13, a loss of chromosome 9p21-24, a gain of chromosome 7q21-36, and a *NRAS* mutation.
7. The method of any one of claims 1, and 3-6, or the use of any one of claims 2-6, wherein a *BRAF* mutation, a loss of chromosome 9p11-13, a loss of chromosome 9p21-24, a gain of chromosome 7q21-36, and/or a *NRAS* mutation indicates that the DCC(s) will develop to metastases.
8. The method of any one of claims 1, and 3-7, or the use of any one of claims 2-7, wherein step (a) further comprises evaluating the proliferation of the DCC(s), wherein an increased proliferation of the DCC(s) indicates that the DCC(s) will develop to metastases.
9. The method of any one of claims 3-8, or the use of any one of claims 2-8, wherein if the DCC(s) are found to carry a *BRAF* mutation, a treatment that is directed against cells carrying said mutation is to be initiated or continued; and wherein if the DCC(s) were found to not carry a *BRAF* mutation, a treatment that is directed against cells carrying said mutation is to be discontinued.
10. The method of claim 9, wherein treatment directed against cells carrying a *BRAF* mutation comprises administration of a *BRAF* inhibitor, or the use of claim 9, wherein the medicament comprises a *BRAF* inhibitor or wherein the medicament is to be administered with a *BRAF* inhibitor.
11. The method of claim 10, or the use of claim 10, wherein the *BRAF* inhibitor is sorafenib or vemurafenib.
12. The method of any one of 3-9, or the use of any one of claims 2-9, wherein if the DCC(s) are found to carry a *NRAS* mutation, a treatment that is directed against cells carrying said mutation is to be initiated or continued; and wherein if the DCC(s) are

found to not carry a *NRAS* mutation, a treatment that is directed against cells carrying said mutation is to be discontinued.