CLAIMS

1. Use of ~~N~~nanoparticles and/or aggregates of nanoparticles ~~for use in~~in the manufacture of a medicament for the treatment of solid tumoral cancer in a human patient who has had a previous anti-cancer treatment involving radiotherapy (RT) and/or immunotherapy for the treatment of a primary tumor for the same cancer, but who has, at clinical staging:

(i) at least one loco-regional recurrent (LRR) cancerous tumor/lesion in a previously irradiated site, and optionally, 1-5 further metastases, or

(ii) 1-5 metastases, irrespective of the level of control of the previously treated primary tumor,

wherein the nanoparticles and/or aggregates of nanoparticles are selected from hafnium oxide (HfO_2) nanoparticles, rhenium oxide (ReO_2) nanoparticles and any mixture thereof, and the treatment of cancer involves a step (a), wherein ~~of administering~~ the nanoparticles and/or aggregates of nanoparticles are to be administered to at least one, preferably only one, tumor/lesion or metastasis in the patient, a step (b), wherein ~~of exposing~~ the patient who has been administered with the nanoparticles and/or aggregates of nanoparticles is to be exposed to ionizing radiation, and a step (c), wherein ~~of administering~~ at least one immuno-oncology (IO) agent, selected from an anti-PD-1 inhibitor, an anti-PDL-1 inhibitor, an anti-CTLA-4 inhibitor and any mixture thereof, is to be further administered to the patient.

2. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to claim 1, wherein the at least one immuno-oncology (IO) agent to be administered in step (c) is an anti-PD-1 inhibitor.

3. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to claim 1 or 2, wherein, in step (a), the nanoparticles and/or aggregates of nanoparticles are to be administered to only one tumor/lesion or metastasis.

4. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to any one of claims 1 to 3, wherein the human patient has had a previous anti-cancer treatment involving RT, or RT and immunotherapy and, at clinical staging, has at least one LRR tumor in a previously irradiated site, and, optionally, 1-5 further metastases.

5. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to any one of claims 1 to 4, wherein the previous anti-cancer treatment for the same cancer involved immunotherapy, and wherein said patient, at clinical staging, has 1-5 metastases, irrespective of the level of control of the previously treated primary tumor.

6. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to any one of claims 1 to 5, wherein the IO agent to be administered during the previous anti-cancer treatment involving immunotherapy is an anti-PD-1 inhibitor, or an anti-PDL-1 inhibitor, optionally, combined with an anti-CTLA4 antibody.

7. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to claim 6, wherein the IO agent to be administered during the previous anti-cancer treatment involving immunotherapy is an anti-PD-1 inhibitor.

8. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to any one of claims 1 to 7, wherein the IO agent to be administered during the previous anti-cancer treatment involving immunotherapy is from the same class as that used during step c).

9. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to any one of claims 4, 6 or 7, wherein the LRR tumor is a head and neck squamous cell carcinoma (HNSCC) LRR tumor, optionally, accompanied by 1-5 metastases.

10. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to claim 9, wherein at least one of the metastases is to a lymph node from a HNSCC primary tumor.

11. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to any one of claims 1 to 3 and 5 to 8, wherein the 1-5 metastases are in the lung and/or the liver.

12. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to any one of claims 1 to 11, wherein the patient suffers from solid tumoral cancer for whom radiotherapy in combination with immunotherapy using an anti PD-1 inhibitor(s) or anti-PDL-1 inhibitor is indicated.

13. ~~Nanoparticles and/or aggregates of nanoparticles for~~ The use according to any one of claims 1 to 12, wherein the patient is identified as an anti-PD-1 inhibitor non-responder or an anti-PDL1 inhibitor non-responder, and/or for whom monotherapy using an anti-PD-1 inhibitor or an anti-PDL1 inhibitor is not indicated.

14. ~~Nanoparticles and/or aggregates of nanoparticles for~~The use according to claim 12 or 13, wherein the patient suffers from bladder cancer, metastatic melanoma, (squamous) non-small cell lung cancer (NSCLC), (metastatic) small cell lung cancer (SCLC), (metastatic) head and neck squamous cell cancer (HNSCC), metastatic Urothelial carcinoma, microsatellite Instability (MSI)-high or mismatch repair deficient (dMMR) metastatic solid tumor cancer (including colorectal cancer), metastatic gastric cancer, metastatic esophageal cancer, metastatic cervical cancer, or metastatic Merkle cell carcinoma, and wherein the metastases are limited in number to between one and five.

15. Use of a ~~P~~pharmaceutical composition comprising nanoparticles and/or aggregates of nanoparticles as described in claim 1 and a pharmaceutically acceptable carrier or support in the manufacture of a medicament for~~, for use in~~ the treatment of cancer in a human patient who has had a previous anti-cancer treatment involving radiotherapy (RT) and/or immunotherapy, for the same cancer, but who has, at clinical staging:

(i) at least one loco-regional recurrent (LRR) cancerous tumor/lesion in a previously irradiated site, and optionally 1-5 further metastases, or

(ii) 1-5 metastases, irrespective of the level of control of the previously treated primary tumor,

wherein the treatment of cancer involves a step (a), wherein ~~of administering~~ the pharmaceutical composition is to be administered to at least one, preferably only one, metastatic site in said patient, a step (b), wherein ~~of exposing~~ the patient who has been administered with the nanoparticles and/or aggregates of nanoparticles is to be exposed to ionizing radiation, and a step (c), wherein ~~of administering~~ at least one IO agent is to be administered to the patient.