Claims:

1. Use of a composition comprising silica particles having a mean diameter between 0.5 and 20 nm in the preparation of a medicament for activating T lymphocytes for therapy for a subject/individual, wherein the activated T lymphocytes are for use in the treatment of cancer, and wherein activation of the T lymphocytes is characterised by an increase in expression of CD69 and/or CD25 by the T lymphocytes.

2. The use of claim 2, wherein the silica particle composition is not substantially directly cytotoxic to cancer cells.

3. The use of claim 1 or claim 2, wherein the cancer is melanoma, skin cancer, lung cancer, pancreatic cancer, colorectal cancer, gastric cancer, breast cancer, lymphoma, leukaemia, uterine cancer, prostate cancer, oesophageal cancer, bone cancer, bladder cancer, cervical cancer, endometrial cancer, brain cancer, eye cancer, ovarian cancer, testicular cancer, liver cancer, renal cancer, or head and neck cancer.

4. Use of a composition comprising silica particles having a mean diameter between 0.5 and 20 nm in the preparation of a medicament for activating T lymphocytes for therapy for a subject/individual, wherein the composition is for use in T cell therapy, and wherein activation of the T lymphocytes is characterised by an increase in expression of CD69 and/or CD25 by the T lymphocytes, wherein the T cell therapy is selected from:

(a) osteoporosis, fracture healing, joint disease, skin disease or a blood vessel disorder; or

(b) hypertension, diabetes, a bone disease, cardiovascular disease, a neurodegenerative pathology, hyperacidity, osteoporosis, dental calculus, Alzheimer's disease or Creutzfeld-Jacob disease; or

(c) the treatment of skin affected by burn, wounding or action of pathogens or of caustic chemicals, psoriasis, eczema or dermatitis.

5. Use of a composition comprising silica particles having a mean diameter between 0.5 and 20 nm in the preparation of a medicament for activating T lymphocytes for therapy for a subject/individual, wherein

the activated T lymphocytes are for use in the treatment of infection, and wherein activation of the T lymphocytes is characterised by an increase in expression of CD69 and/or CD25 by the T lymphocytes.

6. Use of a composition comprising silica particles having a mean diameter between 0.5 and 20 nm in the preparation of a medicament for activating T lymphocytes for therapy for a subject/individual, wherein the activated T lymphocytes are for use in the treatment of inflammatory disease, and wherein activation of the T lymphocytes is characterised by an increase in expression of CD69 and/or CD25 by the T lymphocytes.

7. The use of claim 6, wherein the inflammatory disease is multiple sclerosis, rheumatoid arthritis, Crohn's disease, asthma or ulcerative colitis.

8. The use of any one of the preceding claims, wherein the increase in expression of CD69 and/or CD25 is by at least 20% as compared to unstimulated baseline control.

9. The use of any one of the preceding claims, wherein the T lymphocytes are T cells, optionally wherein the T cells are T helper cells, regulatory T cells, cytotoxic T cells, natural killer T cells (NKT) or gamma delta T cells.

10. The use of any one of the preceding claims, wherein the lymphocyte activation comprises inducing an inflammatory Th1 type response.

11. The use of any one of the preceding claims, wherein:

(a) activation of the lymphocytes comprises increasing expression of one or more further markers selected from CD40L, LAP/GARP and/or FoxP3; and/or

(b) activation of lymphocyte cells comprises increasing expression of IFN-γ.

12. The use of any one of the preceding claims, wherein the composition substantially does not induce lymphocyte cell proliferation.

13. The use of any one of the preceding claims, wherein the silica particles have a mean diameter between 0.5 and 10 nm, optionally wherein the silica particles have a mean diameter between 2 and 5 nm.

14. The use of any one of the preceding claims, wherein:

(a) the composition comprises a stabilising agents, optionally selected from polyols, sugars and/or quarternary ammonium salts, such as choline and carnitine; or

(b) the composition does not comprise a stabilising agent.

15. The use of any one of the preceding claims, wherein the silica composition is as obtainable by precipitation.

16. A method of determining the effectiveness of a silica particle composition for therapeutic administration to a subject or individual, the method comprising:

(a) contacting a sample of T lymphocytes with the silica particle composition;

(b) determining the expression of CD69 and/or CD25 by the T lymphocytes present in the sample; and

(c) identifying the silica particle compositions that cause an increase in the expression of CD69 and/or CD25 by the T lymphocytes as being suitable for use in therapy.

17. An assay for determining the effectiveness of a silica particles composition for therapeutic administration to a subject or individual, the assay comprising:

(a) contacting a sample of T lymphocytes with the silica particle composition;

(b) determining the expression of CD69 and/or CD25 by the T lymphocytes present in the sample;

(c) measuring or quantifying the amount of CD69 and/or CD25 expression to a control value, and if the amount of CD69 and/or CD25 expression is increased relative to the control value, selecting the silica particle composition as suitable for therapeutic administration.

18. Use of the expression of CD69 and/or CD25 by T lymphocytes as markers or biomarkers for the therapeutic effectiveness of silica particle compositions.