CLAIMS

1. An activated carbon adsorbent for oral administration, wherein

the activated carbon adsorbent is in the form of particles obtained by carbonization and subsequent activation of poly(styrene-co-divinylbenzene) particles,

wherein the poly(styrene-co-divinylbenzene) particles are macroporous and have a moisture content of from 5 wt% to 60 wt% relative to the total mass of the poly(styrene-co-divinylbenzene) particles, and wherein the activated carbon adsorbent comprises micropores and mesopores, has a total surface area of at least 1000 m^2/g and a total pore volume of at least 1 cm^3/g, and

wherein at least 50% of the total pore volume is formed by the micropores, and at least 20% of the total pore volume is formed by the mesopores.

2. The activated carbon adsorbent of claim 1, wherein the poly(styrene-co-divinylbenzene) particles have an average particle size of from 400 µm to 800 µm, for example from 500 µm to 650 µm.

3. The activated carbon adsorbent of claim 1 or 2, wherein the poly(styrene-co-divinylbenzene) particles comprise poly(styrene-co-divinylbenzene) with a degree of crosslinking of greater than 80%.

4. The activated carbon adsorbent of any one of claims 1 to 3, wherein the poly(styrene-co-divinylbenzene) particles have a moisture content of from 40 wt% to 60 wt% relative to the total mass of the poly(styrene-co-divinylbenzene) particles.

5. The activated carbon adsorbent of any one of the preceding claims, wherein the poly(styrene-co-divinylbenzene) particles when in a dry form have a total pore volume of at least 0.4 cm^3/g, and wherein at least 50% of the total pore volume of the poly(styrene-co-divinylbenzene) particles is formed by mesopores, less than 30% of the total pore volume of the poly(styrene-co-divinylbenzene) particles is formed by is formed by micropores, and less than 20% of the total pore volume of the poly(styrene-co-divinylbenzene) particles formed by macropores.

6. The activated carbon adsorbent of any one of the preceding claims, wherein the poly(styrene-co-divinylbenzene) particles when in a dry form have a total surface area of from 200 m^2/g to 500 m^2/g.

7. The activated carbon adsorbent of any one of the preceding claims, wherein the poly(styrene-co-divinylbenzene) particles are carbonized to form a carbonized intermediate product by increasing the temperature of the poly(styrene-co-divinylbenzene) particles from room temperature to a temperature of 900 °C over 6 hours under an inert atmosphere, and wherein the carbonized intermediate product is activated by heating the carbonized intermediate product at a temperature of 900 °C for 10 h under CO_2 gas flow.

8. The activated carbon adsorbent of any one of the preceding claims, wherein the activated carbon adsorbent has a total surface area of from 1000 m^2/g to 3000 m^2/g.

9. The activated carbon adsorbent of any one of the preceding claims, wherein the activated carbon adsorbent has a total pore volume of from 1 cm^3/g to 1.5 cm^3/g.

10. The activated carbon adsorbent of any one of claims 1 to 9, wherein from 50% to 80% of the total pore volume of the activated carbon adsorbent is formed by the micropores, and from 20% to 40% of the total pore volume of the activated carbon adsorbent is formed by the mesopores.

11. The activated carbon adsorbent of any one of the preceding claims, wherein the activated carbon adsorbent has an average particle size of from 300 μm to 350 μm, optionally wherein the activated carbon adsorbent is in the form of spherical particles.

12. A pharmaceutical composition comprising the activated carbon adsorbent of any one of claims 1 to 11, and a pharmaceutically acceptable binder, carrier or excipient.

13. Use of the activated carbon adsorbent of any one of claims 1 to 11 in the manufacture of a medicament for the treatment of a renal disease, for example chronic kidney disease (CKD).

14. Use of the activated carbon adsorbent of any one of claims 1 to 11 in the manufacture of a medicament for the treatment of a liver disease, for example chronic liver disease (CLD).

15. A sorbent cartridge containing the activated carbon adsorbent of any one of claims 1 to 11.

16. An *in vitro* method of removing one or more uremic toxins from a fluid, the method comprising providing a fluid comprising the one or more uremic toxins, and contacting the fluid with the activated carbon adsorbent of any one of claims 1 to 11, wherein the one or more uremic toxins are selected from the group consisting of creatinine, p-cresyl sulfate, indoxyl sulfate, hippuric acid, and B2M.

17. A method of manufacturing the activated carbon adsorbent of any one of claims 1 to 11, the method comprising:
    a) providing poly(styrene-co-divinylbenzene) particles that are macroporous and have a moisture content of from 5 wt% to 60 wt% relative to the total mass of the poly(styrene-co-divinylbenzene) particles;
    b) subjecting the poly(styrene-co-divinylbenzene) particles to a carbonization process comprising increasing the temperature of the poly(styrene-co-divinylbenzene) particles from room temperature to 900 °C over 6 hours under an inert atmosphere, thereby providing a carbonized intermediate product; and
    c) subjecting the carbonized intermediate product obtained from step (b) to an activation process comprising heating the carbonized intermediate product at a temperature of 900 °C for 10 h under CO_2 gas flow, thereby providing the activated carbon adsorbent.

18. The method according to claim 17, wherein the poly(styrene-co-divinylbenzene) particles have a moisture content of from 40 wt% to 60 wt% relative to the total mass of the poly(styrene-co-divinylbenzene) particles.

19. The method according to claim 17 or 18, wherein the poly(styrene-co-divinylbenzene) particles comprise poly(styrene-co-divinylbenzene) with a degree of crosslinking of greater than 80%; and/or the poly(styrene-co-divinylbenzene) particles have an average particle size of from 400 µm to 800 µm; and/or the poly(styrene-co-divinylbenzene) particles have a total surface area of from 200 m^2/g to 500 m^2/g when in a dry form.

20. The method according to any one of claims 17 to 19, wherein the poly(styrene-co-divinylbenzene) particles when in a dry form have a total pore volume of at least 0.4 cm^3/g, for example from 0.4 cm^3/g to 0.6 cm^3/g, and wherein at least 50% of the total pore volume of the poly(styrene-co-divinylbenzene) particles is formed by mesopores, less than 30% of the total pore volume of the poly(styrene-co-divinylbenzene) particles is formed by

micropores, and less than 20% of the total pore volume of the poly(styrene-co-divinylbenzene) particles formed by macropores.