CLAIMS

1. A compound of the general formula

cyclo(-Tyr^{1}-His^{2}-Xaa^{3}-Cys^{4}-Ser^{5}-Xaa^{6}-^{D}Pro^{7}-Xaa^{8}-Arg^{9}-Tyr^{10}-Cys^{11}-Tyr^{12}-Xaa^{13}-Xaa^{14}-Xaa^{15}-Pro^{16}-),

having a disulfide bond between Cys^{4} and Cys^{11}, and pharmaceutically acceptable salts thereof,

wherein

Xaa^{3} is Tyr, Tyr(Me), or Tyr(CF_3);

Tyr(Me) is (2*S*)-2-amino-(4-methoxyphenyl)-3-propionic acid;

Tyr(CF_3) is (2*S*)-2-amino-(4-trifluoromethoxyphenyl)-3-propionic acid;

Xaa^{6} is Ala or Acc;

Acc is 1-aminocyclopropane-carboxylic acid;

Xaa^{8} is Orn(iPr);

Orn(iPr) is (2*S*)-N$^{\omega}$-isopropyl-2,5-diaminopentanoic acid;

Xaa^{13} is Gln, or Glu;

Xaa^{14} is Lys(iPr);

Lys(iPr) is (2*S*)-N$^{\omega}$-isopropyl-2,6-diaminohexanoic acid;

Xaa^{15} is ^{D}Pro, or ^{D}Lys(iPr);

^{D}Lys(iPr) is (2*R*)-N$^{\omega}$-isopropyl-2,6-diaminohexanoic acid;

with the proviso that if Xaa^{6} is Ala, then Xaa^{15} is ^{D}Lys(iPr).

2. Cyclo(-Tyr^{1}-His^{2}-Tyr^{3}-Cys^{4}-Ser^{5}-Ala^{6}-^{D}Pro^{7}-Orn(iPr)^{8}-Arg^{9}-Tyr^{10}-Cys^{11}-Tyr^{12}-Gln^{13}-Lys(iPr)^{14}-^{D}Lys(iPr)^{15}-Pro^{16}-), having a disulfide bond between Cys^{4} and Cys^{11}, and pharmaceutically acceptable salts thereof.

3. Cyclo(-Tyr^{1}-His^{2}-Tyr^{3}-Cys^{4}-Ser^{5}-Acc^{6}-^{D}Pro^{7}-Orn(iPr)^{8}-Arg^{9}-Tyr^{10}-Cys^{11}-Tyr^{12}-Gln^{13}-Lys(iPr)^{14}-^{D}Pro^{15}-Pro^{16}-), having a disulfide bond between Cys^{4} and Cys^{11}, and pharmaceutically acceptable salts thereof.

4. A compound according to any one of claims 1 to 3 for use as therapeutically active substances, particularly as substances having CXCR4 antagonizing, anti-cancer activity and/or anti-inflammatory activity and/or stem cell mobilizing activity.

5. A pharmaceutical composition comprising a compound according to any one of claims 1 to 4 and a pharmaceutically inert carrier, in a form suitable for oral, topical, transdermal, injection, buccal or transmucosal administration selected from a tablet, dragée, capsule, solution, liquid, gel, plaster, cream, ointment, syrup, slurry, suspension, powder and suppository.

6. The use of a compound according to any one of claims 1 to 4 for the manufacture of a medicament having CXCR4 antagonizing, anti-cancer activity and/or anti-inflammatory activity and/or stem cell mobilizing activity, for preventing HIV infections in healthy individuals; for slowing, or halting, the viral progression in an HIV infected patient; for treating or preventing, a cancer, or an immunological disease, that is mediated by, or results from, CXCR4 receptor activity; for treating immunosuppression; for accompanying the apheresis collection of peripheral blood stem cells; or for inducing the mobilization of stem cells to regulate tissue repair.

7. A process for the manufacture of compounds according to any one of claims 1-4 which process comprises:

(a) coupling an appropriately functionalized solid support with an appropriately N-protected derivative of Pro which in the desired end-product is in position 16;

(b) removing the N-protecting group from the product thus obtained;

(c) coupling the product thus obtained with an appropriately N-protected derivative of that amino acid which in the desired end-product is in position 15, any functional group which may be present in said N-protected amino acid derivative being likewise appropriately protected;

(d) removing the N-protecting group from the product obtained in step (c);

(e) effecting steps substantially corresponding to steps (c) and (d) using appropriately N-protected derivatives of amino acids which in the desired end-product are in positions n-2 to 1, any functional group(s) which may be present in said N-protected amino acid derivatives being likewise appropriately protected;

(f) if desired, forming a disulfide bridge between the side-chains of the Cys residues at P4 and P11; or alternatively, forming the aforesaid linkage subsequent to step (i), as described herein below;

(g) detaching the product thus obtained from the solid support;

(h) cyclizing the product cleaved from the solid support;

(i) removing any protecting groups present on functional groups of any members of the chain of amino acid residue; and

(j) if desired, attaching one or several isopropyl groups

(k) if desired, converting the product thus obtained into a pharmaceutically acceptable salt or converting a pharmaceutically acceptable, or unacceptable, salt thus obtained into the corresponding free compound or into a different, pharmaceutically acceptable, salt.