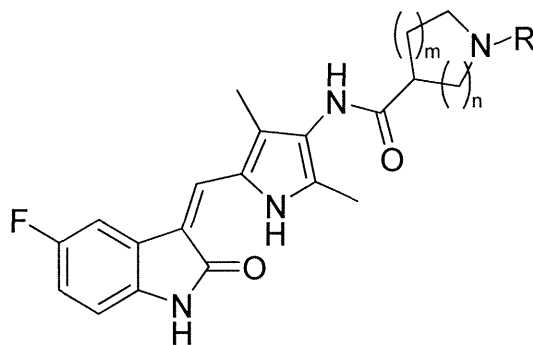


Claims

1. A pyrrole-substituted indolone derivative with a structure shown in general formula (I) below, Compound 4, Compound 6, Compound 7, Compound 8, Compound 9, Compound 15, or pharmaceutically acceptable salts thereof:



(I)

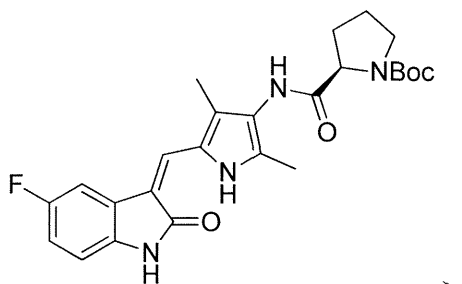
wherein

m is selected from 0, 1 and 2;

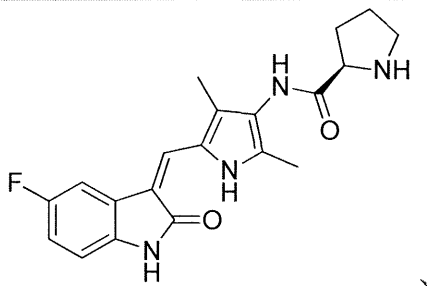
n is selected from 1, 2 and 3; and

R is selected from hydrogen, a C₁-C₆ linear or branched alkyl, a C₃-C₇ cycloalkyl, formyl substituted with a C₁-C₆ linear or branched alkyl, C₃-C₇ cycloalkylformyl, t-butoxycarbonyl, substituted carbamoyl, or a 5- to 7-membered cyclic carbamoyl,

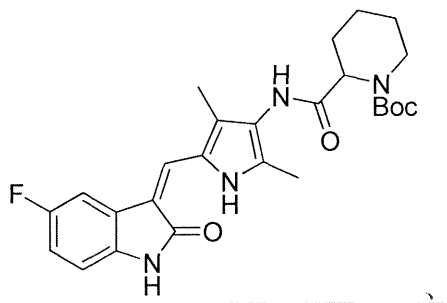
4



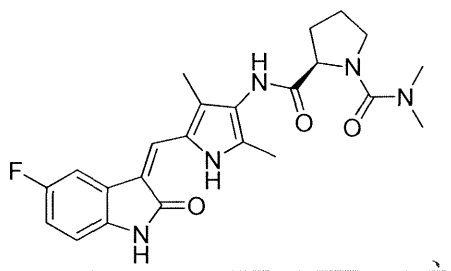
6



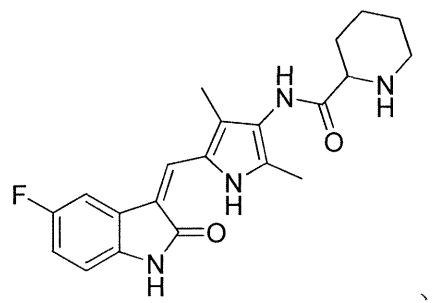
7



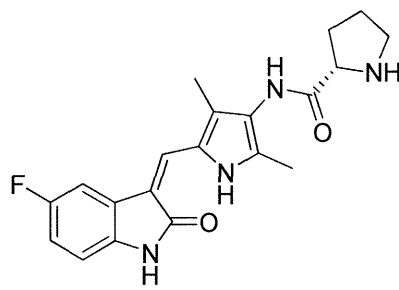
8



9



15

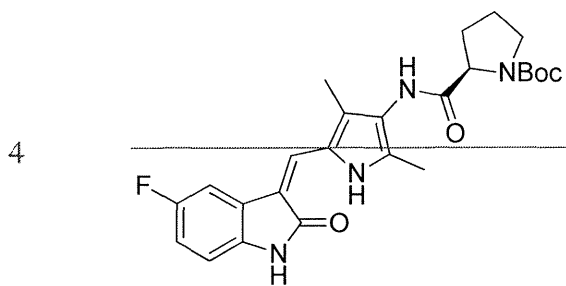
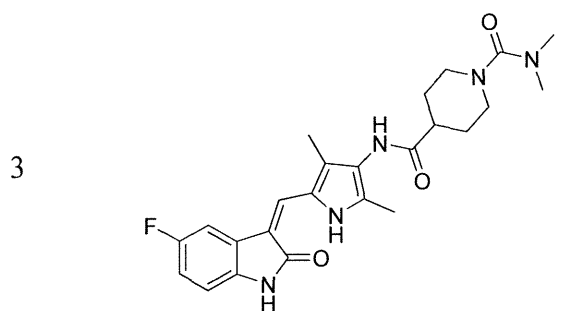
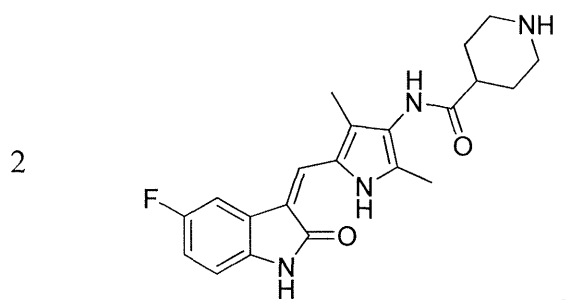
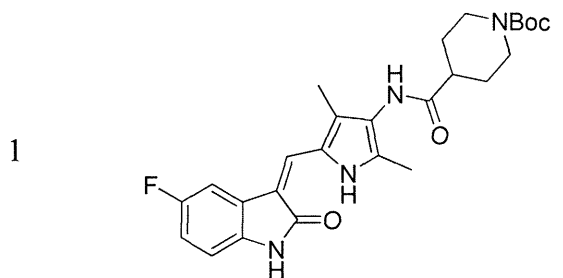


2. The pyrrole-substituted indolone derivative according to claim 1, wherein R is selected from hydrogen, a C₁-C₃ linear or branched alkyl, a C₄-C₆ cycloalkyl, formyl substituted with a C₁-C₃ linear or branched alkyl, C₃-C₆ cycloalkylformyl, t-butoxycarbonyl, N,N-dimethyl carbamoyl, N,N-diethyl carbamoyl, N,N-dipropyl carbamoyl, pyrrolidin-1-ylformyl, or piperidin-1-ylformyl.

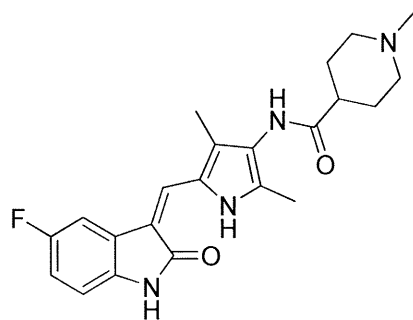
3. The pyrrole-substituted indolone derivative according to claim 1, wherein R is

selected from hydrogen, methyl, t-butoxycarbonyl, N,N-dimethyl carbamoyl, or pyrrolidin-1-ylformyl.

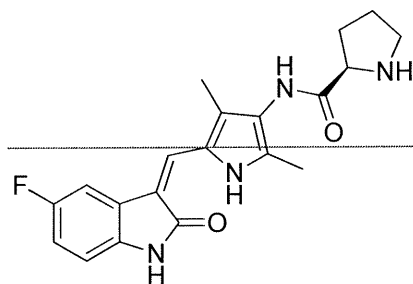
4. The pyrrole-substituted indolone derivative according to claim 1, wherein the pyrrole-substituted indolone derivative with a structure shown in general formula (I) is selected from Compounds 1 to 3, 5, 10 to 145 below:



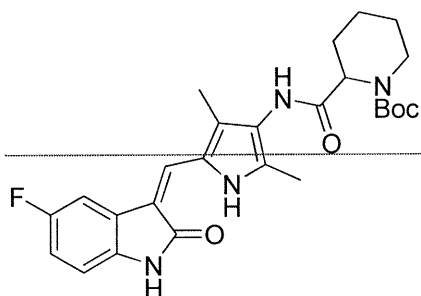
5



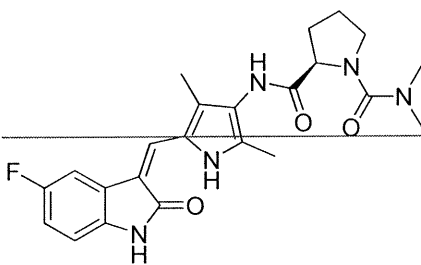
6



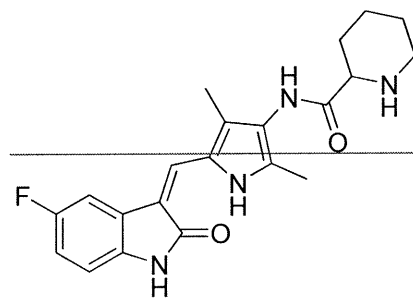
7



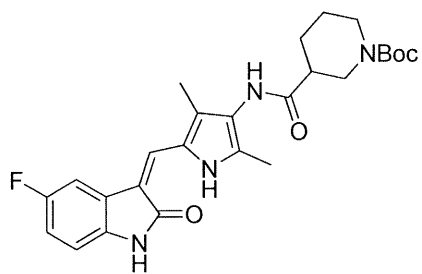
8



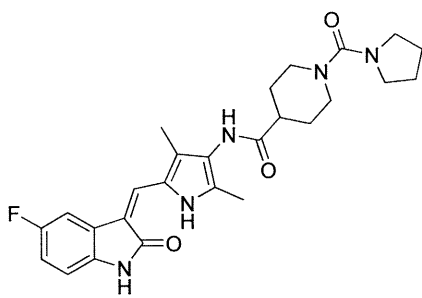
9



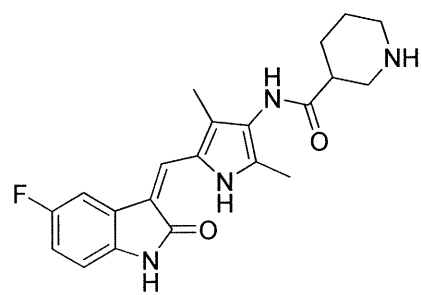
10



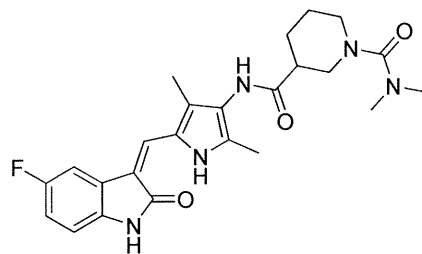
11



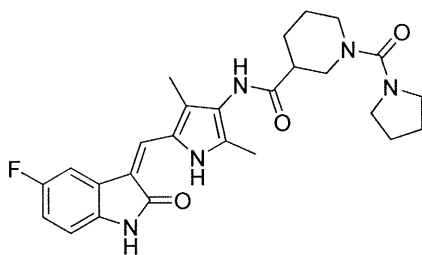
12



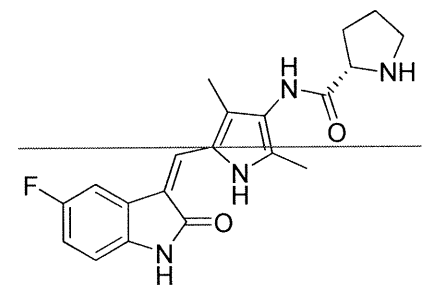
13



or 14



or 15



5. The pyrrole-substituted indolone derivative or pharmaceutically acceptable salts thereof according to any one of claims 1 to 4, wherein the salts are hydrochlorides.

6. A pharmaceutical composition, comprising:

a therapeutically effective amount of one or more pyrrole-substituted indolone derivatives or pharmaceutically acceptable salts thereof according to any one of claims 1 to 5, and

optionally auxiliaries.

7. Use of the pyrrole-substituted indolone derivatives or pharmaceutically acceptable salts thereof according to any one of claims 1 to 5 or the pharmaceutical composition according to claim 6 in the manufacture of a tyrosine kinase inhibitor.

8. Use of the pyrrole-substituted indolone derivatives or pharmaceutically acceptable salts thereof according to any one of claims 1 to 5 or the pharmaceutical composition according to claim 6 in the manufacture of a medicament for the treatment treating and/or prevention of preventing receptor tyrosine kinase-associated diseases in a mammal.

9. Use of the pyrrole-substituted indolone derivatives or pharmaceutically acceptable salts thereof according to any one of claims 1 to 5 or the pharmaceutical composition according to claim 6 in the manufacture of a medicament for treating the treatment or adjunctively treating, and/or preventing prevention of (i) receptor tyrosine kinase-mediated tumors or (ii) tumor cell proliferation and migration driven by receptor tyrosine kinases, in a mammal.

10. The use according to claim 8 or 9, wherein the mammal is human.