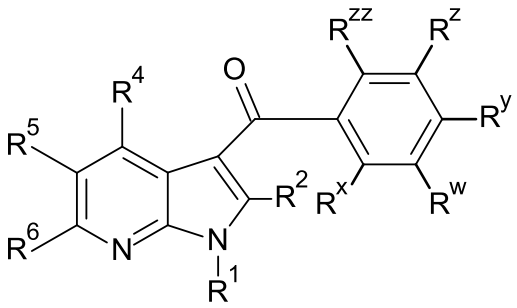
Claims

1. A compound having formula (I)



(I)

wherein

R^1 is H or alkyl;

R^2 is H or alkyl;

R^4 is H, or alkyl;

R^6 is H, or alkyl;

R^w is $-NR^{10}SO_2R^{12}$;

R^{10} is H;

R^{12} is alkyl, or phenylalkyl, wherein the phenyl group is optionally substituted with 1 or 2 groups independently selected from alkyl and halogen;

R^x, R^y, R^z and R^{zz} are selected from:

a) R^x and R^y are F and R^z and R^{zz} are H; and

b) R^x, R^y and R^{zz} are independently F and R^z is H;

R^5 is selected from

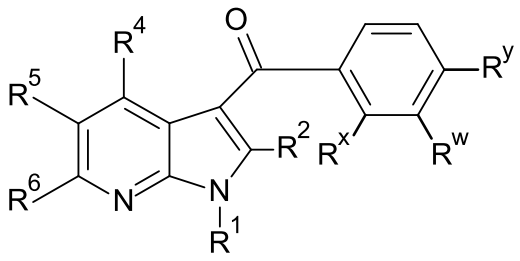
phenyl which is substituted with 1 or 2 groups independently selected from

-POdi(alkyl), and

hydroxyalkyl-ONH-CO-;

or a pharmaceutically acceptable salt, solvate and optical isomer thereof.

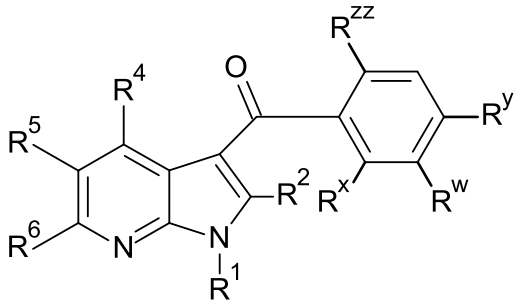
2. A compound of claim 1 having formula (Ia)



(Ia)

or a pharmaceutically acceptable salt, solvate or optical isomer thereof.

3. A compound of claim 1 having formula (Ib)

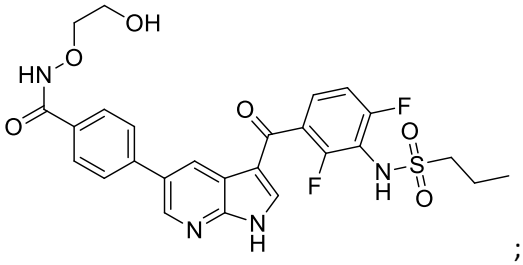
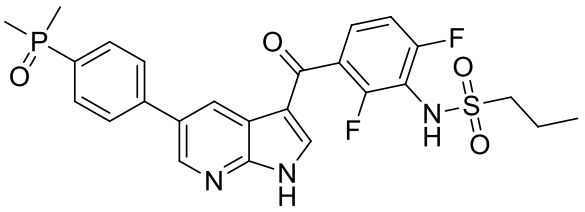
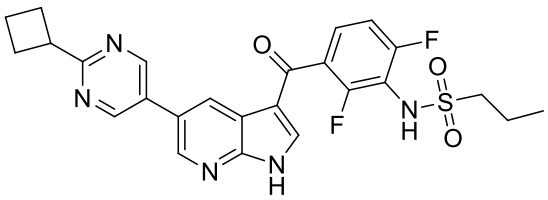
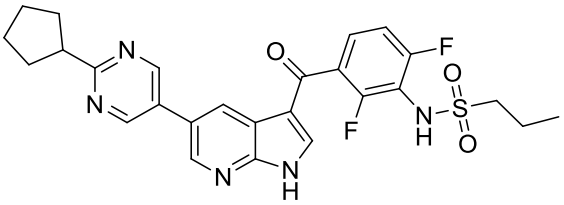
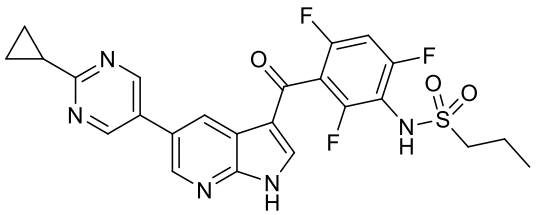
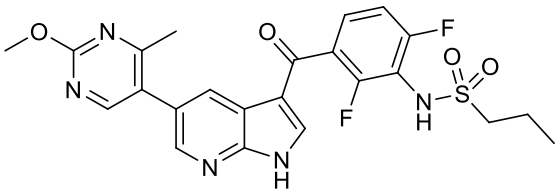


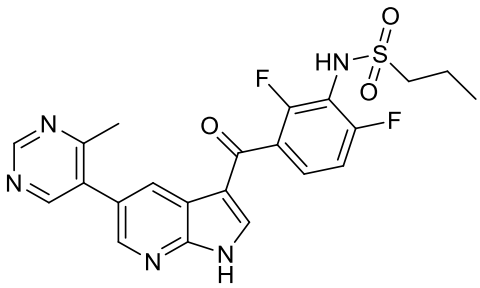
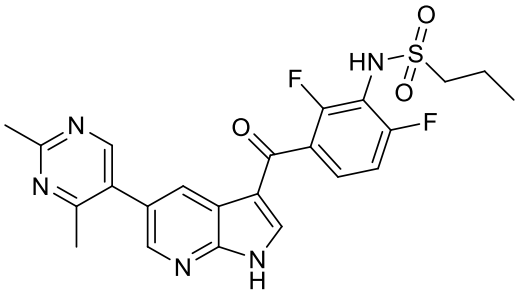
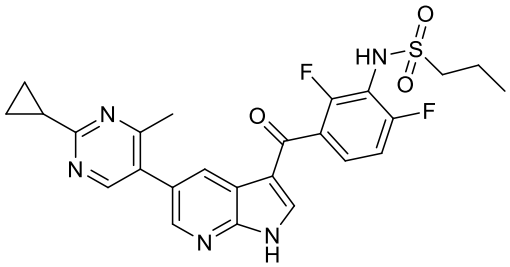
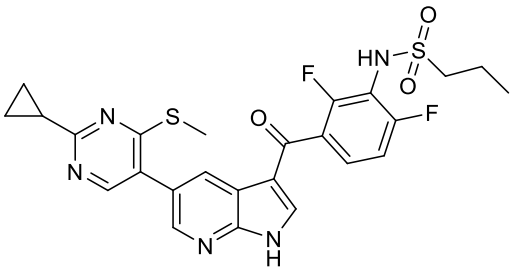
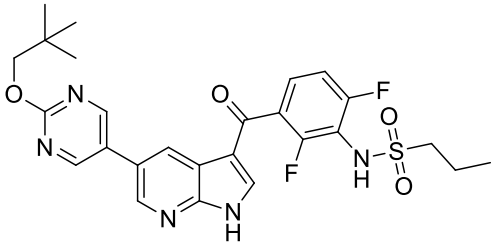
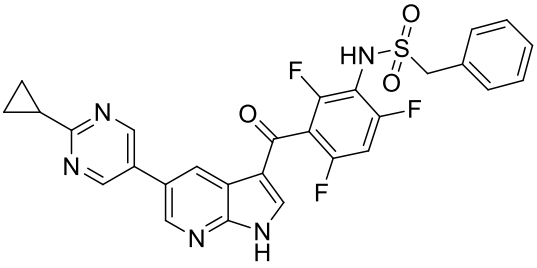
(Ib)

or a pharmaceutically acceptable salt, solvate or optical isomer thereof.

4. A compound of claims 1 to 3, wherein R^1, R^2, R^4 and R^6 are H, or a pharmaceutically acceptable salt, solvate or optical isomer thereof.

5. A compound of claim 1 selected from


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or a pharmaceutically acceptable salt, solvate or optical isomer thereof.

6. A pharmaceutical composition comprising a compound of any one of claims 1 to 5 or a pharmaceutically acceptable salt, solvate or optical isomer thereof.

7. A compound or a pharmaceutically acceptable salt, solvate or optical isomer thereof according to any one of claims 1 to 5 or a pharmaceutical composition according to claim 6 for use in selectively inhibiting protein kinase MKK4 over protein kinases JNK1 and MKK7.

8. A compound or a pharmaceutically acceptable salts, solvates or optical isomers thereof according to any one of claims 1 to 5 or a pharmaceutical composition according to claim 6 for use in promoting liver regeneration or reducing or preventing hepatocyte death.

9. The use of a compound or a pharmaceutically acceptable salt, solvate or optical isomer thereof according to any one of claims 1 to 5 for the manufacture of a pharmaceutical

composition for selectively inhibiting protein kinase MKK4 over protein kinases JNK1 and MKK7.

10. The use of a compound or a pharmaceutically acceptable salt, solvate or optical isomer thereof according to any one of claims 1 to 5 for the manufacture of a pharmaceutical composition for promoting liver regeneration or reducing or preventing hepatocyte death.