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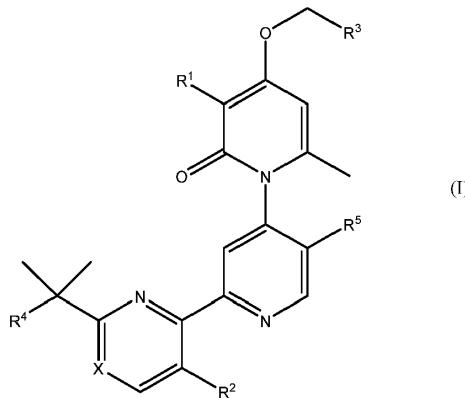
Norwegian Industrial Property Office

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(54)	Title	METHYL/FLUORO-PYRIDINYL-METHOXY SUBSTITUTED PYRIDINONE-PYRIDINYL COMPOUNDS AND FLUORO-PYRIMIDINYL-METHOXY SUBSTITUTED PYRIDINONE-PYRIDINYL COMPOUNDS
(56)	References Cited:	US-A1- 2012 142 709 US-A1- 2013 143 906 US-A1- 2006 183 768 US-B2- 7 893 061

Enclosed is a translation of the patent claims in Norwegian. Please note that as per the Norwegian Patents Acts, section 66i the patent will receive protection in Norway only as far as there is agreement between the translation and the language of the application/patent granted at the EPO. In matters concerning the validity of the patent, language of the application/patent granted at the EPO will be used as the basis for the decision. The patent documents published by the EPO are available through Espacenet (<http://worldwide.espacenet.com>) or via the search engine on our website here: <https://search.patentstyret.no/>

PATENTKRAV

1. Forbindelse med formel (I):



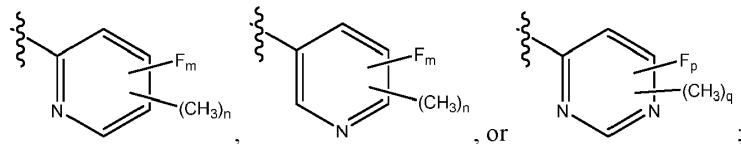
5 eller et farmasøytisk akseptabelt salt derav, hvor:

X er CH eller N;

R¹ er valgt fra gruppen bestående av H, C₁-C₆ alkyl, fluor, klor, brom, cyano eller -CF₃;

R² er valgt fra gruppen bestående av H, methyl, cyano eller fluoro;

R³ er valgt fra gruppen som består av:



10 R⁴ er valgt fra gruppen bestående av H, methyl, OH og O-CH₃;

R⁵ er H eller C₁-C₃ alkyl;

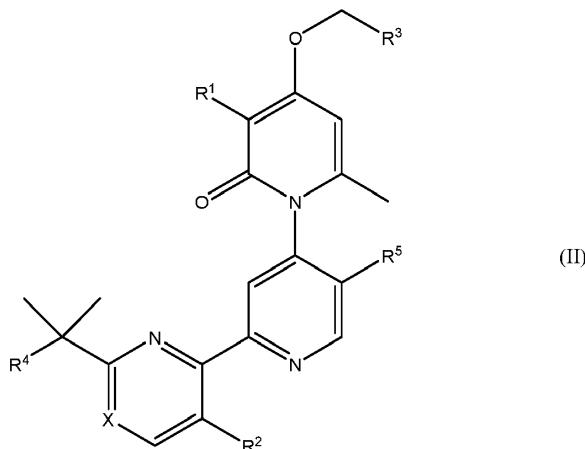
m er 1 eller 2;

n er 0 eller 1;

15 p er 1; og

q er 0 eller 1.

2. Forbindelse ifølge krav 1, hvor forbindelsen har strukturen med formel (II):



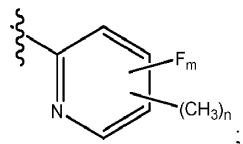
eller et farmasøytisk akseptabelt salt derav, hvor:

X er CH eller N;

5 R¹ er valgt fra gruppen bestående av H, C₁-C₆ alkyl, fluor, klor, brom, cyano eller -CF₃;

R² er valgt fra gruppen bestående av H, methyl, cyano eller fluoro;

R³ er



R⁴ er valgt fra gruppen bestående av H, methyl, OH og -OCH₃;

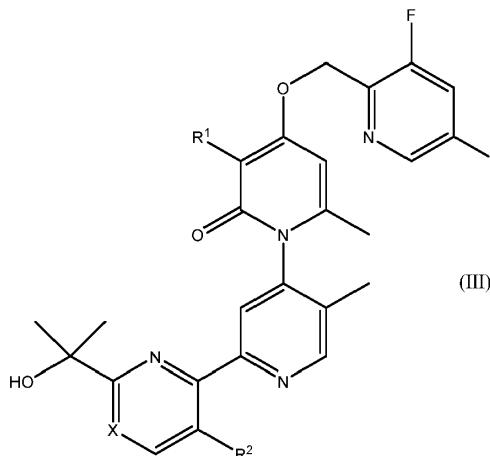
10 R⁵ er H eller C₁-C₃ alkyl;

m er 1 eller 2; og

n er 0 eller 1.

15 3. Forbindelse ifølge krav 2, hvor R³ er valgt fra gruppen bestående av 3,5-difluorpyridin-2-yl, 3-fluorpyridin-2-yl, 5-fluor-3-metylpyridin-2-yl, 6-fluorpyridin-2-yl, 6-fluor-4-metylpyridin-2-yl, 3-fluor-5-metylpyridin-2-yl og 5-fluorpyridin-2-yl.

4. Forbindelse ifølge krav 3, hvor forbindelsen har strukturen med formel (III):



eller et farmasøytisk akseptabelt salt derav, hvor:

X er CH eller N;

5 R¹ er klor eller brom; og

R² er -H eller methyl.

5. Forbindelse ifølge krav 4, hvor forbindelsen er valgt fra gruppen bestående av:

10 3-brom-4-((3,5-difluorpyridin-2-yl)metoksy)-6"--(2-hydroksypropan-2-yl)-3",5',6'-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-klor-4-((3,5-difluorpyridin-2-yl)metoksy)-6"--(2-hydroksypropan-2-yl)-3",5',6'-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-brom-4-((3,5-difluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((3,5-difluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((3,5-difluorpyridin-2-yl)metoksy)-6"--(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

20 3-klor-4-((3,5-difluorpyridin-2-yl)metoksy)-6"--(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-brom-4-((3,5-difluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on; og

25 3-klor-4-((3,5-difluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on.

6. Forbindelse ifølge krav 5, hvor forbindelsen er 3-klor-4-((3,5-difluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-

bipyridin]-2-on.

7. Forbindelse ifølge krav 6, hvor forbindelsen er (-)-3-klor-4-((3,5-difluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on.

8. Forbindelse ifølge krav 6, hvor forbindelsen er (+)-3-klor-4-((3,5-difluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on.

10

9. Forbindelse ifølge krav 3, hvor forbindelsen er valgt fra gruppen bestående av:

3-klor-4-((5-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((3-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((6-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

20 3-klor-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((5-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

25 3-klor-4-((5-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2'',2''-terpyridin]-2-on;

3-brom-4-((5-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2'',2''-terpyridin]-2-on;

30 3-klor-4-((5-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((5-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((5-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-277-[1,4':2'',2''-terpyridin]-2-on;

35 3-brom-4-((5-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2'',2''-terpyridin]-2-on;

3-brom-4-((3-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;
3-klor-4-((3-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
5 3-brom-4-((3-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
3-klor-4-((3-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;
3-brom-4-((3-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;
10 3-klor-4-((3-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
3-brom-4-((3-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
15 3-brom-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;
3-klor-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
3-brom-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
20 3-klor-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
3-brom-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;
25 3-klor-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
3-brom-4-((5-fluor-3-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
3-brom-4-((6-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;
30 3-klor-4-((6-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
3-brom-4-((6-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;
35 3-klor-4-((6-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((6-fluorpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((6-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

5 3-brom-4-((6-fluorpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-brom-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

10 3-klor-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-brom-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

15 3-klor-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

20 3-klor-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-brom-4-((6-fluor-4-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

25 3-brom-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

30 3-brom-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

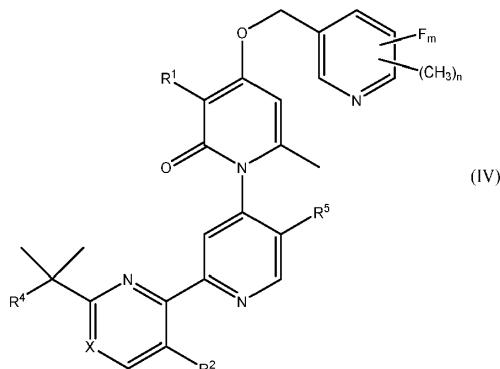
3-klor-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

35 3-klor-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on; og

3-brom-4-((3-fluor-5-metylpyridin-2-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on.

10. Forbindelse ifølge krav 1, hvor forbindelsen har strukturen med formel (IV):



eller et farmasøytisk akseptabelt salt derav, hvor:

X er CH eller N;

5 R¹ er valgt fra gruppen bestående av H, C₁-C₆ alkyl, fluor, klor, brom, cyano eller -CF₃;

R² er valgt fra gruppen bestående av H, methyl, cyano eller fluoro;

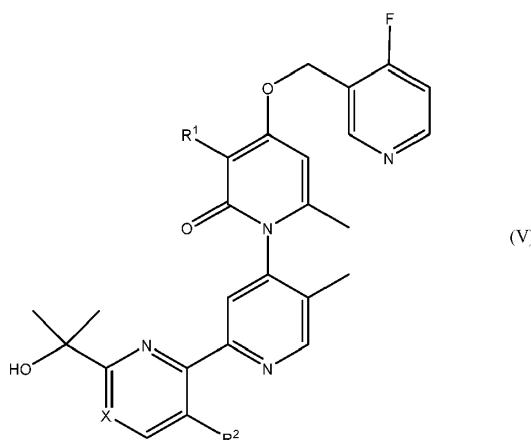
R⁴ er valgt fra gruppen bestående av H, methyl, OH og -OCH₃;

R⁵ er H eller C₁-C₃ alkyl;

m er 1 eller 2; og

10 n er 0 eller 1.

11. Forbindelse ifølge krav 10, hvor forbindelsen har strukturen med formel (V):



15 eller et farmasøytisk akseptabelt salt derav, hvor:

X er CH eller N;

R¹ er klor eller brom; og

R² er -H eller methyl.

20

12. Forbindelse ifølge krav 11, hvor forbindelsen er valgt fra gruppen bestående av:

3-klor-4-((4-fluorpyridin-3-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((4-fluorpyridin-3-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

5 3-klor-4-((4-fluorpyridin-3-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-brom-4-((4-fluorpyridin-3-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-klor-4-((4-fluorpyridin-3-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-

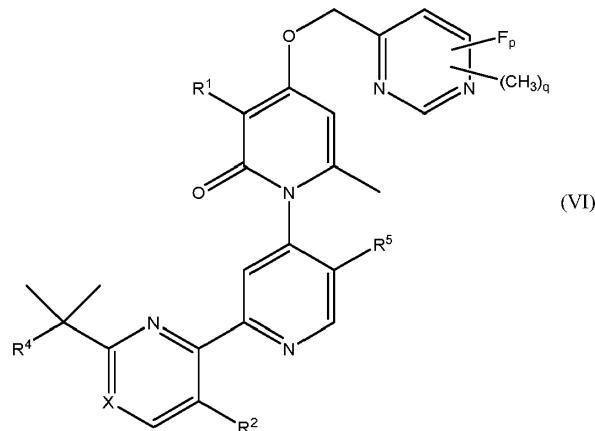
10 metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((4-fluorpyridin-3-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((4-fluorpyridin-3-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on; og

15 3-brom-4-((4-fluorpyridin-3-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on.

13. Forbindelse ifølge krav 1, hvor forbindelsen har strukturen med formel (VI):



20 eller et farmasøytisk akseptabelt salt derav, hvor:

X er CH eller N;

R¹ er valgt fra gruppen bestående av H, C₁-C₆ alkyl, fluor, klor, brom, cyano eller -CF₃;

R² er valgt fra gruppen bestående av H, methyl, cyano eller fluoro;

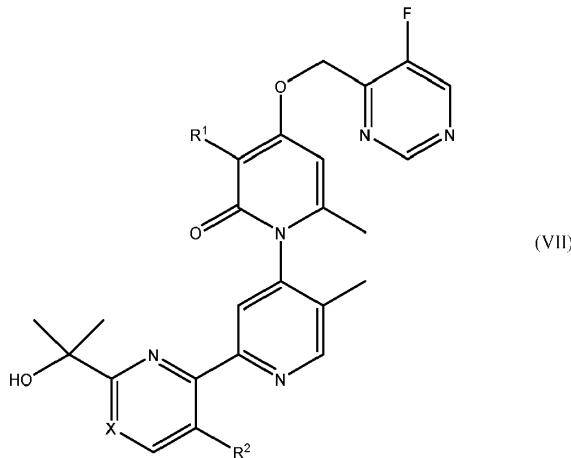
25 R⁴ er valgt fra gruppen bestående av H, methyl, OH og -OCH₃;

R⁵ er H eller C₁-C₃ alkyl;

p er 1; og

q er 0 eller 1.

14. Forbindelse ifølge krav 13, hvor forbindelsen har strukturen med formel (VII):



5 eller et farmasøytisk akseptabelt salt derav, hvor:

X er CH eller N;

R¹ er klor eller brom; og

R² er -H eller methyl.

10

15. Forbindelse ifølge krav 14, hvor forbindelsen er valgt fra gruppen bestående av:

3-klor-4-((5-fluorpyrimidin-4-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((5-fluorpyrimidin-4-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)pyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((5-fluorpyrimidin-4-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

3-brom-4-((5-fluorpyrimidin-4-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-5',6-dimetyl-2H-[1,4':2',2"-terpyridin]-2-on;

20 3-klor-4-((5-fluorpyrimidin-4-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-brom-4-((5-fluorpyrimidin-4-yl)metoksy)-2'-(2-(2-hydroksypropan-2-yl)-5-metylpyrimidin-4-yl)-5',6-dimetyl-2H-[1,4'-bipyridin]-2-on;

3-klor-4-((5-fluorpyrimidin-4-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on; og

25 3-brom-4-((5-fluorpyrimidin-4-yl)metoksy)-6''-(2-hydroksypropan-2-yl)-3",5',6-trimetyl-2H-[1,4':2',2"-terpyridin]-2-on.

16. Farmasøytisk sammensetning omfattende en terapeutisk effektiv mengde av en forbindelse ifølge krav 1 eller et farmasøytisk akseptabelt salt derav, og en farmasøytisk akseptabel bærer.

- 5 17. Farmasøytisk sammensetning ifølge krav 16, videre omfattende en terapeutisk effektiv mengde av en aktiv farmasøytisk ingrediens valgt fra gruppen bestående av antiinflammatoriske legemidler, anti-aterosklerotiske medikamenter, immunsuppressiv medikamenter, immunmodulatoriske medikamenter, cytostatika, angiogeneseinhibitorer, kinaseinhibitorer, cytokin. blokkerere og hemmere av 10 celleadhesjonsmolekyler.