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(12)

(KR)
(A)

(51) 。 Int. Cl. ⁷
C07C 331/24

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(43)

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(81)

가

가

가

가

가

가

AP ARIPO : 가

EA :

EP :

OA OAPI : 가

(30)	99105349.7	1999 03 16	EP(EP)
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(71)

- 51368

- 1422

14

- 1050

160/06

가

- 5600

6235

(72)

,
 - 51519 3
 ,
 - 42799 47
 , ,
 - 1640 7
 ,
 - 1000 21
 ,가 , .
 - 5612
 ,
 - 1275 58

(74)

:

(54)

,
 . , , ,
 .
 , , , ,
 ,
 ,
 . , , ,
 .
 , (dock), , (piling), , , (intake screen)
 , 가 , , , , , , , ,
 , (Asiatic clam) ,
 , 가 ,
 . 가 ,
 .

- n -

60 %

가

가

,

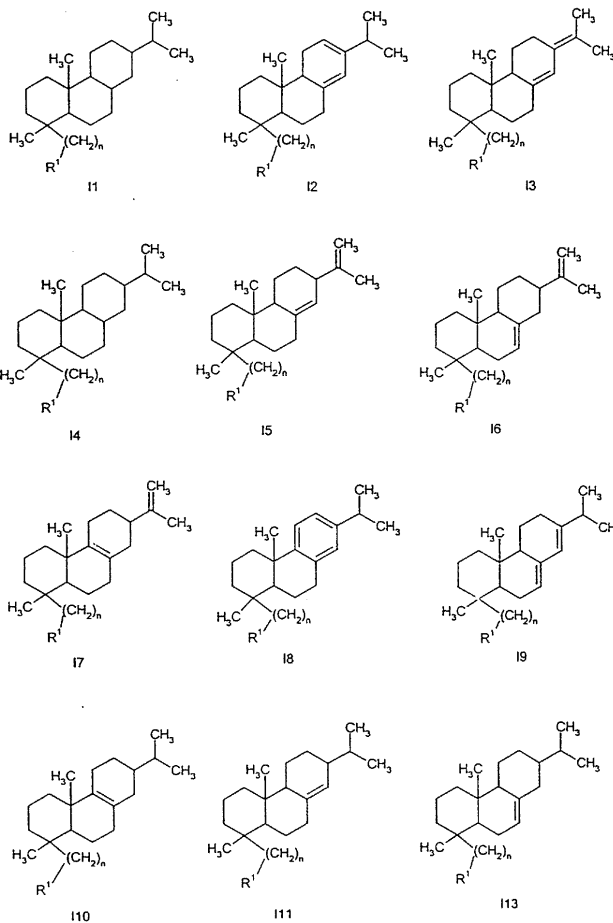
,

,

가,

< >

(I 1 13) 1 ,



R^1 NR^2R^3 { R^2 , $C_1 - C_8 -$ R^3 $C=OR^4$ [R^4 , OR^5 NH R^5 (R^5 , $C_1 - C_8 -$)] } ,

R^1 $N=CR^6R^7$ (R^6 , $C_1 - C_6 -$, R^7 $C_1 - C$) ,

R^1 , , ,

n 0 1 .

, Cl, Br, I F , 1 8, 1 4 , , , .

(I 1 13) ,

R^1 NR^2R^3 { R^2 , $C_1 - C_4 -$ R^3 $C=OR^4$ [R^4 , OR^5 NH R^5 (R^5 , $C_1 - C_4 -$)] } ,

R^1 $N=CR^6R^7$ [R^6 , (R^7 $C_1 - C_6 -$)] ,

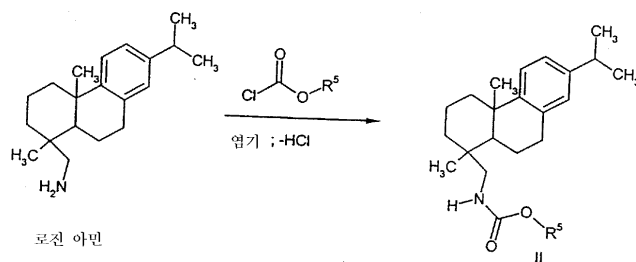
R^1 , , .
 R^3 (I 1 13) , R^1 NR^2R^3 , R^2
 $C=OR^4$ (, R^4) .
, (I 1 13) , R^1 NR^2R^3 , R^2
 R^3 $C=OR^4$ (, R^4 OR^5 NHR^5 , R^5 , , n - i - n - , s - ,
i - t - ,) .
, (I 1 13) , R^1 $N=CR^6R^7$, R^6
, , n - i - n - , s - , i - t - , R^7 , , n -
i - , n - , s - , i - t - .
, (I 1 13) , R^1 , , .

n 1 .
(I 8) .
가 (Wood) , , (Hercules) (Tall Oil), (Gum)
가 . (Gang - Fung Chen inPro
gress in Organic Coatings 20, 1992, 139 - 167)
, n 1 (I 8)
/
가 .

1

(I 8) HCl -
가 . (Houben - Weyl Vol.8,1952, 137 - 140; ibid. Vol.11/2,1958, 27 - 37) .

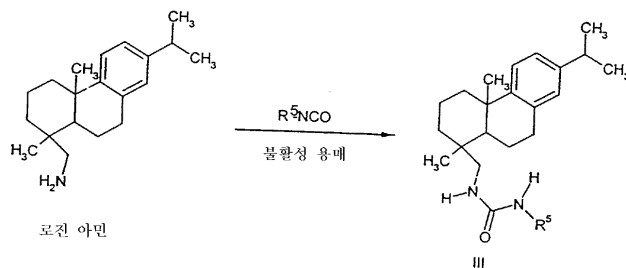
1



2

(III) (, ,)
[(Houben - Weyl Vol. E4,1983, 352 - 357)],
() .

2

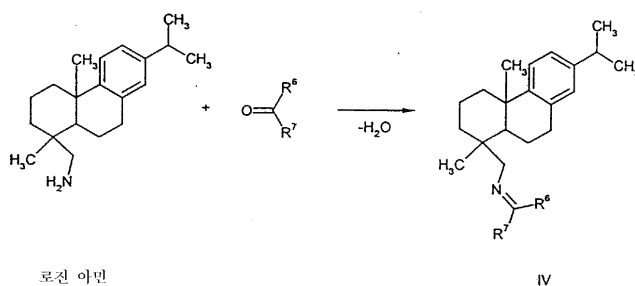


3

(Schiff - base)
yl Vol. 11/2,1958, 74 - 85).

가 (Houben - We

3



(T. Ohsawa et al., Tetrahedron Lett.,1989, 845 - 846)].

(CAS - Nr.: 115 269 - 93 - 7)
Ozaki, Chem Rev.72, 457 - 460)]
3)

[(analog ous sequence with phosgene:
, - (

(E. Corey et al., Tetrahedron Lett.1981, 299 - 302)

n 0 (1)
n. J. Chem.1963, 834 - 836)

가 .

- 1 - - (Stockel et al., Ca

- 1 - -

(Chem. Pharm. Bull.1985, 1472 - 1487)

(I, n=0)

가 .

가

가

(algae); (phyla Chlorophyta), (Pharophyta) (Rhodophyta)

(Ciona intestinalis), (Diplosoma listerianum)

(Botryllus sclosseri) (Ascidiacea) (Clava squamata),

(Hydractinia echinata), (Obelia geniculata) (Tubul

aria larynx) (Hydrozoa) (tunicate);

(Mytilus edulis), (Cassostrea virginica), (Ostre

a edulis), (Ostrea chilensis), (Lasaea rubra) (Dreissenidae)

() (Corbuculidae) () [,

(Electra pilosa), (Conopeum reticulatum), (Bugula neritina),

(Bowerbankia gracilis)] ;

(Hydroides norvegica), (Pomatoceros triqueter),

(Mercierella enigmata) (Spirorbis spp) ;

(Cirripedia) () [, (Balanus amphitrite),

(Lepas anatifera), (Balanus balanus), (Balanus balano

ides), (Balanus hameri), (Balanus creatus), (Balanu

s improvisus), (Balanus gealeatus), (Balanus eburneus),

(Elminius modestus), (Balanus tulipiformis), (Balanu

s perforatus)] .

(bacterial slime)

가

(standpipe),

(I 1 13)

가 . (, Cu) [, () , - n -

[illegible]

(action spectrum)

가 .

(algicide) (, , , ,)

), (molluscicide) (, , , ,)

$$), \quad [\quad , \quad , \quad , \quad]$$
$$(\quad, \quad, \quad, \quad)]$$

$[\quad , 2 - (N, N - \quad) - 5 - \quad , 2 - t -$
 $- 4 - \quad - 6 - \quad - 1, 3, 5 - \quad , 4, 5 - \quad - 2 - n - \quad - 4 - \quad - 3 - \quad , 2, 4,$
 $5, 6 - \quad , \quad , 2, 4, 6 - \quad , 2, 3, 5, 6 -$
 $- 4 - (\quad) - \quad , \quad , \quad - \quad - \quad 2 -$
 $- 1 - \quad)$.

0.5 60 %, 1 25 %

가 (1)

a) (, ,), b)
 (, ,), c) (, ,), d) [, ,]
 가 .

730 - 732 Williams in Antifouling Marine Coatings, Noyes, Park Ridge, 1973 (Ungerer in Chem. Ind. 1985, 37, 730 - 732)

1

$$N - \quad - \quad (1)$$

(D) 1.

5 가 .

16
N - (: 86%).

: ; ^1H -NMR, (ppm): 7.94 - 8.23(1H), 7.15(1H), 6.99(1H), 6.89(1H), 5.46(1H), 2.76 - 3.27(5H), 1.22(6H), 1.21(3H), 0.95(3H).

2

(2)

0 , (2.7) (1.1)
N - 가 . 0 1 , 20%
가 , 1 . 20% 가 ,
(: 85%).

: ; ^1H NMR, (ppm): 7.16(1H), 7.00(1H), 6.88(1H), 2.76 - 3.34(5H), 1.22(6H), 1.21(3H), 0.98(3H).

3

(3)

0 가 . 가 , 45 16 (1.5) 가 .
(: 87%).

: ; ^1H - NMR, (ppm): 7.16(1H), 6.99(1H), 6.89(1H), 3.37(2H), 2.90(2H), 2.82(1H), 1.22(6H), 1.21(3H), 0.96(3H).

가

(settlement rate)

(), (4 - n - . 25 40) 2 mL

27 ± 2 24
A) , B) C) . 20%
가 ,
가 . 1) : , 2) :
, 3) :

2 3
50 (EC - 50) - (Spearman - Karber method)

0.2 micron
가

5 ppm

- n -

() 0

	EC50(ppm)
1	2.6
2	0.12
4.5 - - n -	0.37

(57)

1.

(I)

