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| (87) | WO 1999/58454 |
| (87) | 1999 11 18 |

(81)

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| EP | : | , | , | , | , | , | , | , | , | , |
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(71)

| | | | | | |
|------|-------|---|---|---|------|
| (72) | . | 0 | 1 | 0 | 92 |
| | 15222 | | | | 1015 |
| | 15203 | | | | 1223 |

(74)

1

(54)

10mJ/cm² 175mJ/cm² (, 200 300nm)

UV

(*Cryptosporidium parvum*)
(oocyst)

xx

가

가 (" UV")

(: Lorenzo - Lorenzo et al., J. Parasitol. 1993, 79, 67 - 70] (G
iardia muris)[: E.L.Jarol, " Effect of disinfectants on Giardia cysts" , CRC Critical Reviews in Environ
mental Control, 1988, 18, 1 - 28] 3000mJ/cm² UV
(Snowball) , 350 400mJ/cm² U
V [: 9416287.2 (1984.11.8); Wat. Res., 1995, 29, 25
83 - 2586]. , Hg
350 400mJ/cm² UV , 2
가 " "

[: M.J. Lorenzo - Lorenzo, M.E. Area - Mazea, I. Villacorta - Martinez de Maturana and D. Duran - O
reiro, " Effect of Ultraviolet Disinfection of Drinking Water on the Viability of *Cryptosporidium parvum* Oo
cysts" , J. Parasitol. 1993, 79(1), 67 - 70] () Hg UV 150
 , 2
UV 5000mJ/cm² . 150 UV
" " , " UV DNA
" UV ,

[: A. Bushnell, W. Clark, J. Dunn and K. Salisbury, " Pulsed Light Sterilization of Products Packag
ed by Blow - Fill - Seal Techniques" , Pharm. Engin. 1997, Sept/Oct, 74 - 83] , , ,
가 " " UV UV
1000mJ/cm²
UV ,

[: R. LaFrenz, " High Intensity Pulsed UV for Drinking Water Treatment" , Proc. AWWA WQT Con
ference, Denver, CO, Nov., 1997]
 , 200mJ/cm² 6 100% "
" UV가 " DNA "
 , UV Hg
 , 가
 , 가
 가

" " " , " " " DNA 가 () UV " " " UV .

200 300nm (UV) , UV DNA, RNA . DNA RN A() DNA RNA 가 , 2 , UV .

30mJ/cm² (200 300nm) UV . 4.5 10mJ/cm² UV 가 .

1 () ,

2 (bench scale) .

111L(29.4gal) UV 6 x 1kW UV 가 1 μ 215gpm(814L/min) 4 . (8.3) () UV .

2 : 100% 100 71.7 (1.39). 71.7% UV , (1.39) 100% , (%) UV (%) . ((

%)

(%)

| UV (mJ/cm ²) | | | |
|--------------------------|----------|----------|----------|
| 20 | 113 ± 36 | 145 ± 38 | 174 ± 14 |
| 69 | 110 ± 34 | 176 ± 38 | 103 ± 48 |
| 137 | 37 ± 17 | 83 ± 21 | 68 ± 32 |
| 152 | 13 ± 14 | 29 ± 31 | 31 ± 13 |
| 167 | 8 ± 7 | 33 ± 10 | 33 ± 8 |

) 100%

100%

| UV (mJ/cm ²) | |
|--------------------------|-----|
| 20 | 3.9 |
| 69 | 4.5 |
| 167 | 4.5 |

[1]

UV

| | (n="3) | | | (n="3) | |
|------------|--------------------------|-----------------------|--------------------|--------------------------|-------------|
| | UV (mJ/cm ²) | | | UV (mJ/cm ²) | |
| - 30/3/98 | | | | | |
| 1 | | 82.0 ± 4.0 | 81.4 ± 8.1 | | 90 ± 7.1 |
| UV | | 71.7 ± 15.461.7 ± 4.9 | 29.7 ± 1.145 ± 7 * | | 53.2 ± 21.5 |
| - 31/3/98 | | | | | |
| 2 | | 90.4.6 ± 1.2 | 79.8 ± 4.3 | | 97.3 ± 2.5 |
| UV | 167 | 4.9 ± 4.5 | 13.7 ± 3.1 | 167 | 19.9 ± 2.7 |
| - 01/04/98 | | | | | |
| 3 | | 88.7 ± 1.0 | 56 ± 9.889 ± 2.7 * | | 100 ± 0 |
| UV | 69 | 73.6 ± 4.1 | 72.7 ± 2.3 | 67 | 55 ± 13 |
| - 06/04/98 | | | | | |
| 4 | | 76.6 ± 4.4 | 80.4 ± 1.7 | | 99 ± 1 |
| UV | 152 | 8.5 ± 1.4 | 12.1 ± 1.5 | 152 | 23 ± 9.6 |
| 07/04/98 | | | | | |
| 2UV | | 45.3 ± 16.8 | 49.3 ± 4.0 | | 96.7 ± 1.2 |
| UV | 137 | 25 ± 8.9 | 34.3 ± 4.0 | 137 | 36.4 ± 9.1 |
| 08/04/98 | | | | | |
| 5 | | 79.7 ± 5.1 | 77.3 ± 4.2 | | 94.7 ± 3.1 |
| UV | 20 | 75.3 ± 6.8 | 47 ± 7.872.7 ± 1 * | 21 | 92.7 ± 1.2 |

[2]

| UV | | | | |
|-------------|--------------------------|------------|------------------------|--------------|
| | UV (mJ/cm ²) | | | |
| | | 1 | 2 | 3 |
| 1 | | | | |
| | | 25 | 75 | 150 |
| (%)(#/) | | 5.3%(2/28) | 35%(14/40) | 62.5%(15/23) |
| | | | | |
| 1 | | | | |
| | | 50 | 500 | 5,000 |
| (%)(#/) | | 44%(11/15) | 100%(20/20) | 100%(23/23) |
| | | | | |
| UV 31/03/98 | | | | |
| | | 1,000 | 10,000 | 100,000 |
| (%)(#/) | 191 | 0%(0/24) | 0%(0/12)% [*] | 0%(0/24) |
| | | | | |
| UV 01/04/98 | | | | |
| | | 1,000 | 10,000 | 100,000 |
| (%)(#/) | 79 | 0%(0/22) | 0%(0/26) | 0%(0/25) |
| | | | | |
| UV 08/04/98 | | | | |
| | | 1,000 | 10,000 | 100,000 |
| (%)(#/) | 23 | 0%(0/18) | 0%(0/18) | 4.5%(1/22) |

가 ,

(57)

1.

10mJ/cm² 175mJ/cm² ,

2.

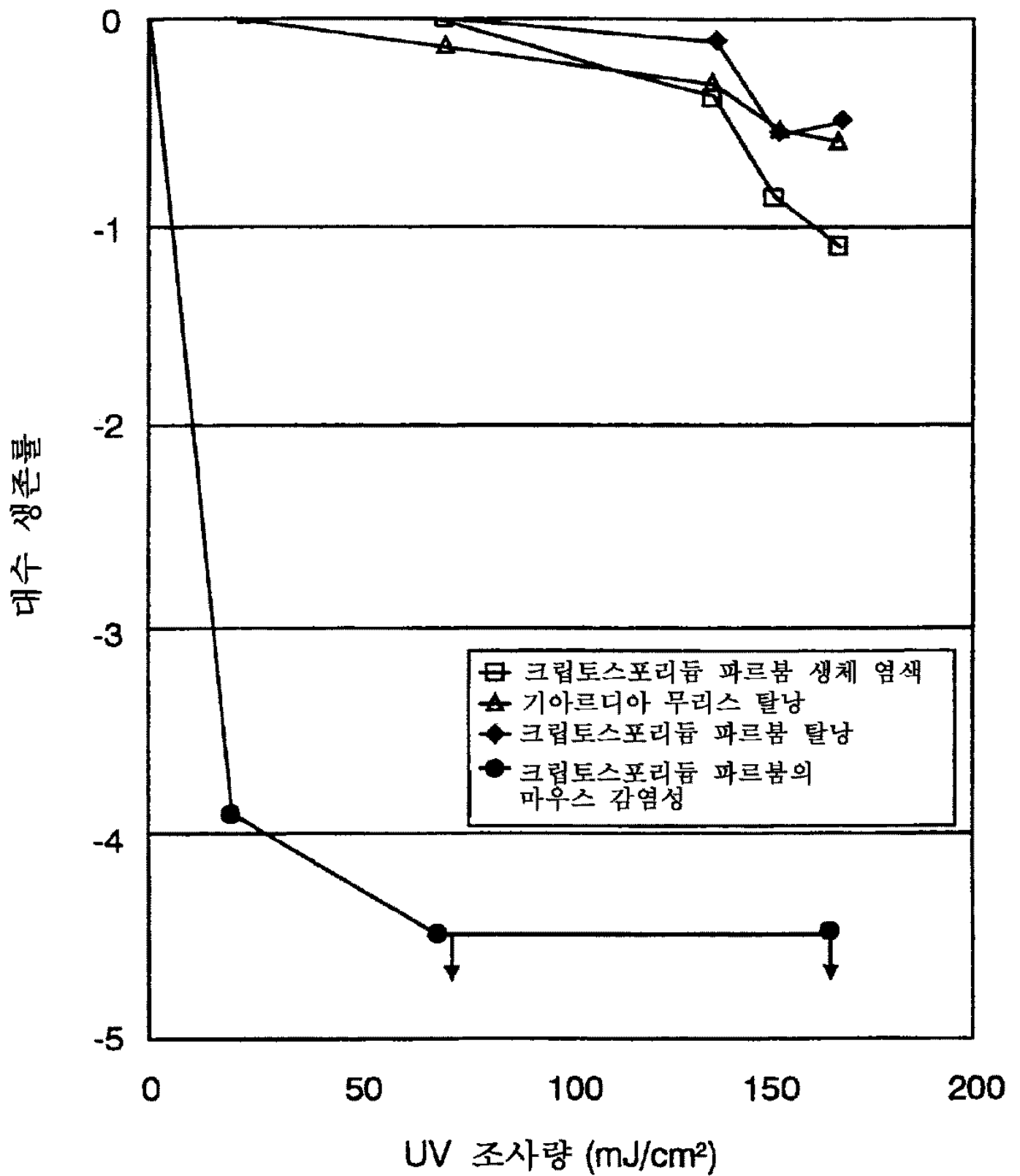
1 , 가 UV 200 300nm .

3.

1 2 , 20mJ/cm² 30mJ/cm² .

1

대수 생존률 대 UV 조사량



2

대수 생존률 대 UV 조사량

