4

a y a y a a a y
a 2D a a a a . I a
a a a y , a , ab , -
a , a a , a a a -
a y 2D . F , a a a a
a a y a b a a -
a a a a a . , a a-
a a a a a a a
a a a a b a a . -
a a a ab a a b a
3D a a a a . a
3D a a a a
y a y a a a . N

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a A a a Ha S a b a y .

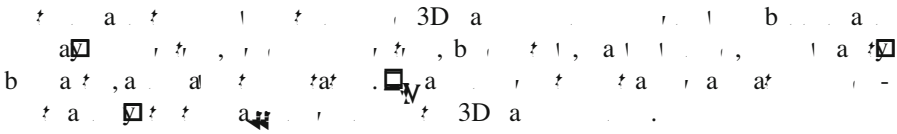
A a –H. S a –C –S. a –S. G
B -A -E S (BA) Lab a y C B a E ,
D a M , B a a N ' H a , Ha a M a S ,
Ca b , A, $A

A. G a
CASE B a a a M ab a Lab a y (CASE-B L),
D a M a a a A a E ,
A a a y C , L S C a a
A a M a C , Ca N y
C a , OH, $A

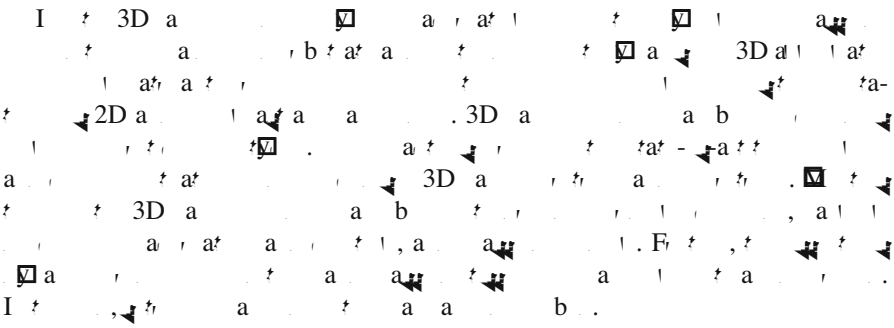
D ( )
B -A -E S (BA) Lab a y C B a E
a D I D a , B a a N ' H a , Ha a M a
S , Ca b , A, $A

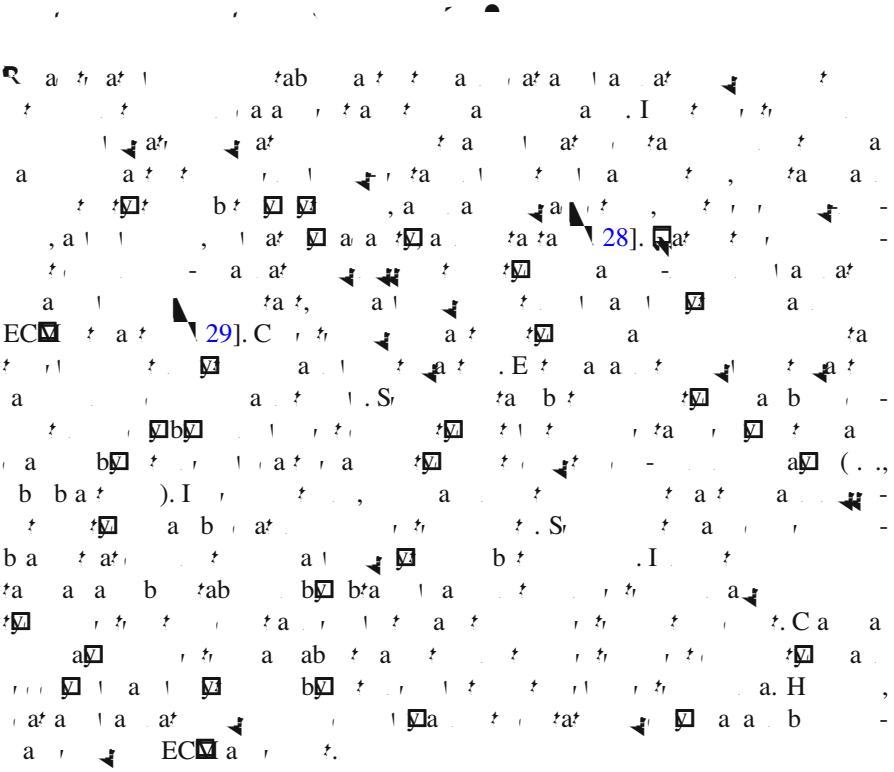
Ha a -I H a S a y Ca b , A, $A
- a : @ .b . a a . .

.H. Ba a . (.), *Cancer Targeted Drug Delivery: An Elusive Dream*,
DOI 10.1007/978-1-4614-7876-8_24, S S +B M a 2013

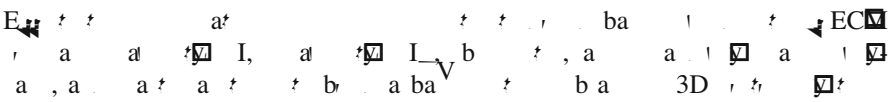


a a a





Embedded and Overlay Cell Cultures



[illegible] [illegible] [illegible] [

4. C a 3D

a	L a (μL)[a]	S a ( )[b]	S a a a ( )	C ($)	C a (b)
G a L S	50	0.15 0.3	96; 384	140	I S (:// . .)
a3D Ha D C a	25 50	0.1 0.4 34, 36]	96; 384	206	3D B a (://3 b a .)
I A a	25 35	0.05 0.3	96	33	CL C Lab G bH (:// . ab.)
B -A b S	50 75	0.6 1 38]	1; 6 24; 96	600 (96- K)	a 3D B (:// . 3 b . /)
a a	A	10	55 L 110 L 250 L 500 L	5525	S , I . (:// . .)

[a] a b a Da a b a a b

[b] S a 2- 4- a . Da a b a a b b a

C 96- a a

a a a

a a ab a a ba

S 2000, a a ISS
y a a a . F a ,
L 1 a a a a a a a a -
a a ba a a y A
2001 D b 2001 ISS E 3 47, 48]. B a
3D , a a
a a a . a y a a
a y a a a a
a ' b a (. ., , a , a a a) b y
a a a a a a
a a .

(-)

D a b ISS E , a a a
b a a b a a y -
. A , a a ( )
y b a a y b ASA 49]. a
a -a a a y a a (F . 24.4a, b).
a - a a a a b a , a
a a a' a y y a a . C
y

4. [illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] (B16 F10)	[illegible]	[illegible]	10	[illegible]
[illegible]	[illegible] (FSK-1; KS42; 87)	F	[illegible]	9 (FSK-1); 5 (KS42); 1 3 (87)	[illegible]
[illegible]	[illegible] (HCC97H)	[illegible] (LGA)	[illegible]	8 10	[illegible]
[illegible]	[illegible] (L12B); [illegible] (L 67)	[illegible] E [illegible] H -S [illegible]	[illegible]	4	[illegible]
[illegible]	[illegible]	F	[illegible]	1 3.5	[illegible]
[illegible]	[illegible] (B16 F10)	F	[illegible]	5.8	[illegible]
[illegible]	[illegible] (LCa)	[illegible] I [illegible]	[illegible]	2	[illegible]

4. C a 3D a

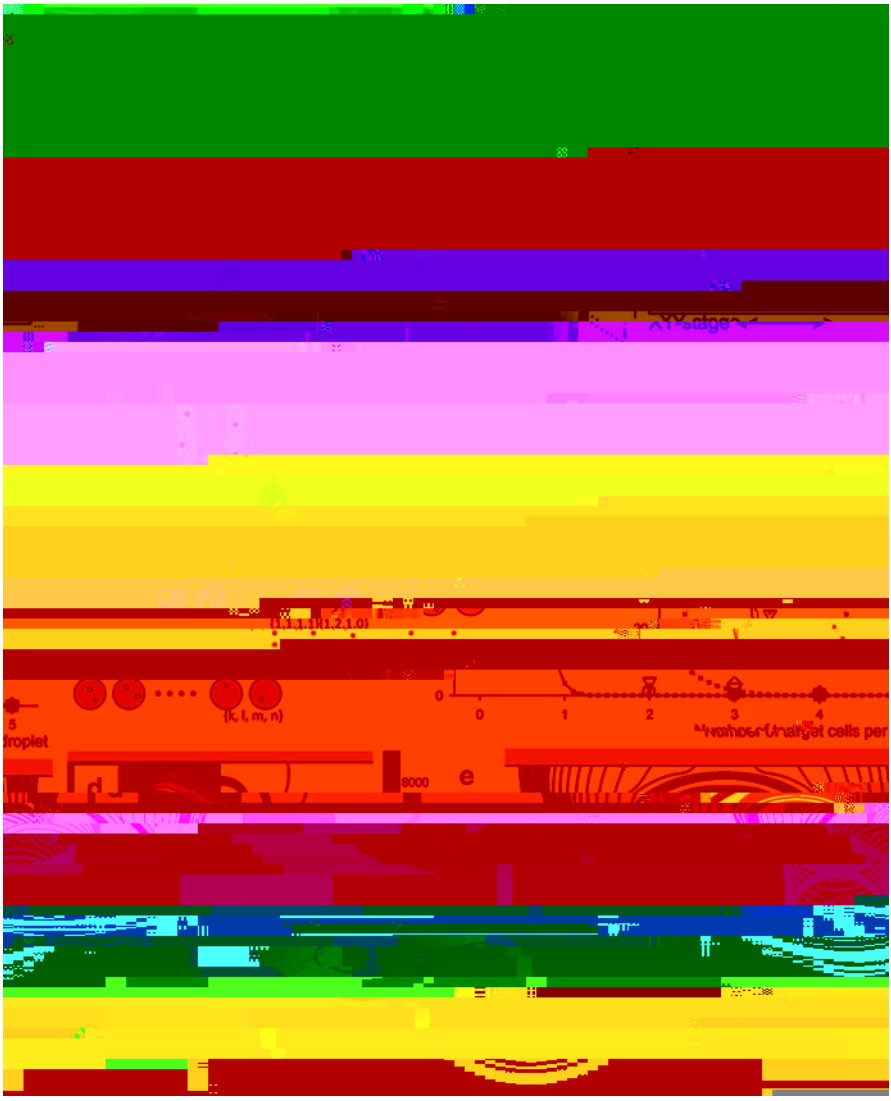
C ab

a a

a

a - a 3D , , (2) a a a b a a , a (3) - .

C a a b bab a a a a a b a b a - a , a a a 60, 61]. S a a - a a a a 3D a a b . E a a ab a a ab a b a a a a a



. **4.** S a a - b a a *xyz* a a a a a . E a a (O_CA -5) a b b a (C-5) a ( ) S a a a a a a a . ( ) A a a a . ( ) b a a , ( ) b , ( ) b a , a ( ) a a a a a a a . ( ) C a a- bab *P*( ), a a b a a- =1.5 10^5 / . ( ) a b a *left half* a *right half*, G - a b a : =0.5, =30, *d* /*d* =2.85, *σ* /*σ* =2541, *μ* /*μ* =10. ( ) S a a a a . ( ) 59], ( ) a ( ) 60], a ( ) a ( ) 68]

[illegible]

[illegible] , [illegible] a [illegible] A253, KB, a [illegible] B16F10 [illegible] , [illegible] a [illegible] a [illegible] [illegible] a [illegible] . [illegible] a [illegible] b [illegible] a [illegible] a [illegible] 83, 84]. [illegible] a [illegible] a [illegible] a [illegible] a b a [illegible] a [illegible] a b a [illegible] b b a [illegible] 85]. [illegible] b b a [illegible] a [illegible] by [illegible] [illegible] b [illegible] EC [illegible] a [illegible] . D [illegible] a a -

[illegible]

10 5 200 [87, 88] F . 24.6b.
99 % 1 % / [illegible]
, EC [illegible] 32, 89 91]. V
(O_CA -5) 3D
86]. I G2)
92].
92].
ADA16 93], 94], b -
95], a b 96].
88, 97, 98]. I
91]. C - b a C3 3-E1 99].

ff f

EC 3D
EC 2, 100]. S b
101 103]. 3D
S (C , C) (LA), (GA), (EG), (LGA), (LG)
104, 105].
106] EC
107

C [illegible] a 2D [illegible] ay [illegible] b [illegible] a [illegible] a [illegible] a [illegible] 3D [illegible] a [illegible] a [illegible] 151, 152]. Ca [illegible] 2D [illegible] 3D [illegible] ay [illegible] a [illegible] y [illegible] 153],

a Ma a ab a . a a - 59]. a a a a a 59]. H , a a b a a a a a a a . I a a ab , a b - a a 166]. S a - 3D - a a b - - . a ab b a a a a - a 167]. H - b a , a a a a a a a . S a a , a b a a a a a , a a b ab a a - a a a a ab 3D a a 149, 168]. A a a a a a a a a ab a a a 3D a a , a b a a a a a a a a a a a b a a a a a a . F 3D a a a a a a a a a a a

11. L H, a DC, a F, B J (2004) a a a a b a a a a 3- a b a a . J C B 164(4):603 612
12. a , L S, La J, C A, J JC, G a F, b , B J (2002) B a4 - a a a - a a a a a a a a a . Ca C 2(3):205 216
13. D a E, O L (2001) a -a a a a a b - a a a a . C B 64:211 233
14. K b S (1994) I a a a a ,

tt :// . a a. / _
a / ta / a / t /248. t
48. J J (2013) C a b t y a t y t : ASA b a -
t t t y y a t : a a a ta ta a ty
tt :// . a a. / _ a / ta / a / t /CBOSS-01-C . t
49. a a S (2008) a t a a ty t 3- b ya
t . I : E -G y ( ) B t ya a , 14. E ,
A t a , 275 296
50. B y C, K SJ (2002) b a t a t a t: a t -ba a a -
ty B t B 80(4):465 476
51. Ba a J, a t AL, C abb A, Sa SF, H b t-K a t , O t C, CA
(2010) O a ty 3 t : a t ta a t ty t
a t a t . a t b 8(11):791 801

53. G , B, B a E, S a J, JF, Ja b IJ, Ga SA, Da , D (2009) -
a b a a a a . C
42(2):219 228

95. a E, ba D (1987) a : GD a -
. S 238(4826):491
96. a GS, D S, a H, a a A, Q b , B S (2004) A a a a a b a a b a a . S C 22(6):1030 1038
97. K a J, J , K B, H H, S C, a S, G AJ (2002) S a b a : a a a a . a A a S 99(15):9996 10001
98. Da E, J , a DA, a a a , Ha D, Ka DZ a S, L (2005) I ab a b a b a a - a . C a 111(4):442 450
99. H A, a , G a F, a S (2007) B a a b a

160. Ha JD, L SL (2008) A a a a-a a a
E S-FLI a . C C 7(2):250 256
161. BA (2009) A a a a . B a a
77(11):1665 1673
162. Ba a -a A a , H, b A (2005) A a -
b a a a a a a -
a a 3- a
a a . J B S 10(7):705 714
163. a , a a , a (2005) D a
a a a a a a -