

Lampiran 5. Data Uji Pendahuluan Aktivitas Antikanker

1. Dibutyltin(IV) Di-4-nitrobenzoat

Konsentrasi (µg/ml)	SEL HIDUP					Σ sel/mL (10 ⁵)	Rata-rata Σ sel/mL (10 ⁵)	% Sel hidup	% Inhibisi
	I	II	III	IV	V				
K-	9	9	8	9	7	21,00	21,00	100	0
	7	9	9	9	8	21,00			
	8	7	9	9	9	21,00			
1	8	7	8	9	7	19,50	19,0	89,66	9,52
	8	9	8	7	7	19,50			
	7	8	7	7	7	18,00			
2	7	7	7	7	6	17,00	17,4	82,85	17,14
	8	6	7	7	7	17,50			
	7	7	6	7	8	17,50			
4	6	7	6	5	6	15,00	16,00	76,19	23,80
	5	7	6	7	8	16,50			
	5	6	7	8	7	16,50			
8	5	4	6	5	6	13,00	13,84	65,90	34,10
	4	6	5	6	6	13,50			
	6	6	6	6	6	15,00			
16	4	5	4	3	5	10,50	10,67	50,80	49,19
	3	4	5	5	5	11,00			
	5	4	3	4	5	10,50			

Konsentrasi 0 ppm :

$$\Sigma_{sel_1} = \frac{\sum sel_{hidup}}{volume} = \frac{(9 + 9 + 8 + 9 + 7)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\Sigma_{sel_2} = \frac{\sum sel_{hidup}}{volume} = \frac{(7 + 9 + 9 + 9 + 8)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\Sigma_{sel_3} = \frac{\sum sel_{hidup}}{volume} = \frac{(8 + 9 + 9 + 9 + 7)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned}\sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(21,00 + 21,00 + 21,00) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 21,00 \times 10^5 \text{ sel/mL}\end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{sel rata-rata}} \right) \times 100\% = \left(1 - \frac{21,00}{21,00} \right) \times 100\% = 0 \%$$

Konsentrasi 1 ppm :

$$\sum \text{sel}_1 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(8 + 7 + 8 + 9 + 7) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{39 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 19,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_2 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(8 + 9 + 8 + 7 + 7) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{39 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 19,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_3 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(7 + 8 + 7 + 7 + 7) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{36 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 18,00 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned}\sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(19,50 + 19,50 + 18,00) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 19 \times 10^5 \text{ sel/mL}\end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{sel rata-rata}} \right) \% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{sel rata-rata}} \right)$$

$$\times 100\% = \left(1 - \frac{19}{21,00} \right) \times 100\% = 9,52 \%$$

Konsentrasi 2 ppm :

$$\sum \text{sel}_1 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(7 + 7 + 7 + 7 + 6) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{34 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 17,00 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_2 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(8 + 6 + 7 + 7 + 7) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{35 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 17,50 \times 10^5 \text{ sel/mL}$$

$$\sum_{sel_3} = \frac{\sum sel_{hidup}}{volume} = \frac{(7 + 7 + 6 + 7 + 8)sel}{0,02 \times 10^{-3} mL} = \frac{35sel}{0,02 \times 10^{-3} mL} = 17,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum_{sel \text{ rata-rata}} &= \frac{\sum sel_1 + \sum sel_2 + \sum sel_3}{3} = \frac{(17,00 + 17,50 + 17,50) \times 10^5 \text{ sel} / mL}{3} \\ &= 17,4 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum sel_{rata-rata}} \right) \times 100\% = \left(1 - \frac{17,4}{21,00} \right) \times 100\% = 17,14\%$$

Konsentrasi 4 ppm :

$$\sum_{sel_1} = \frac{\sum sel_{hidup}}{volume} = \frac{(6 + 7 + 6 + 5 + 6)sel}{0,02 \times 10^{-3} mL} = \frac{30sel}{0,02 \times 10^{-3} mL} = 15,00 \times 10^5 \text{ sel/mL}$$

$$\sum_{sel_2} = \frac{\sum sel_{hidup}}{volume} = \frac{(5 + 7 + 6 + 7 + 8)sel}{0,02 \times 10^{-3} mL} = \frac{33sel}{0,02 \times 10^{-3} mL} = 16,50 \times 10^5 \text{ sel/mL}$$

$$\sum_{sel_3} = \frac{\sum sel_{hidup}}{volume} = \frac{(8 + 5 + 7 + 7 + 6)sel}{0,02 \times 10^{-3} mL} = \frac{33sel}{0,02 \times 10^{-3} mL} = 16,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum_{sel \text{ rata-rata}} &= \frac{\sum sel_1 + \sum sel_2 + \sum sel_3}{3} = \frac{(15,00 + 16,50 + 16,50) \times 10^5 \text{ sel} / mL}{3} \\ &= 16,00 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum sel_{rata-rata}} \right) \times 100\% = \left(1 - \frac{16,00}{21,00} \right) \times 100\% = 23,80 \%$$

Konsentrasi 8 ppm :

$$\sum_{sel_1} = \frac{\sum sel_{hidup}}{volume} = \frac{(4 + 6 + 5 + 6 + 5)sel}{0,02 \times 10^{-3} mL} = \frac{26sel}{0,02 \times 10^{-3} mL} = 13,00 \times 10^5 \text{ sel/mL}$$

$$\sum_{sel_2} = \frac{\sum sel_{hidup}}{volume} = \frac{(6 + 5 + 6 + 6 + 4)sel}{0,02 \times 10^{-3} mL} = \frac{27sel}{0,02 \times 10^{-3} mL} = 13,50 \times 10^5 \text{ sel/mL}$$

$$\sum_{sel_3} = \frac{\sum sel_{hidup}}{volume} = \frac{(6+7+6+5+6)sel}{0,02 \times 10^{-3} mL} = \frac{30sel}{0,02 \times 10^{-3} mL} = 15,00 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum_{sel \text{ rata-rata}} &= \frac{\sum sel_1 + \sum sel_2 + \sum sel_3}{3} = \frac{(13,00 + 13,50 + 15,00) \times 10^5 \text{ sel} / mL}{3} \\ &= 13,84 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum sel_{rata-rata}} \right) \times 100\% = \left(1 - \frac{13,84}{21,00} \right) \times 100\% = 34,10 \%$$

Konsentrasi 16 ppm :

$$\sum_{sel} = \frac{\sum sel_{hidup}}{volume} = \frac{(5+4+4+5+3)sel}{0,02 \times 10^{-3} mL} = \frac{21sel}{0,02 \times 10^{-3} mL} = 10,50 \times 10^5 \text{ sel/mL}$$

$$\sum_{sel} = \frac{\sum sel_{hidup}}{volume} = \frac{(3+5+5+5+4)sel}{0,02 \times 10^{-3} mL} = \frac{22sel}{0,02 \times 10^{-3} mL} = 11,00 \times 10^5 \text{ sel/mL}$$

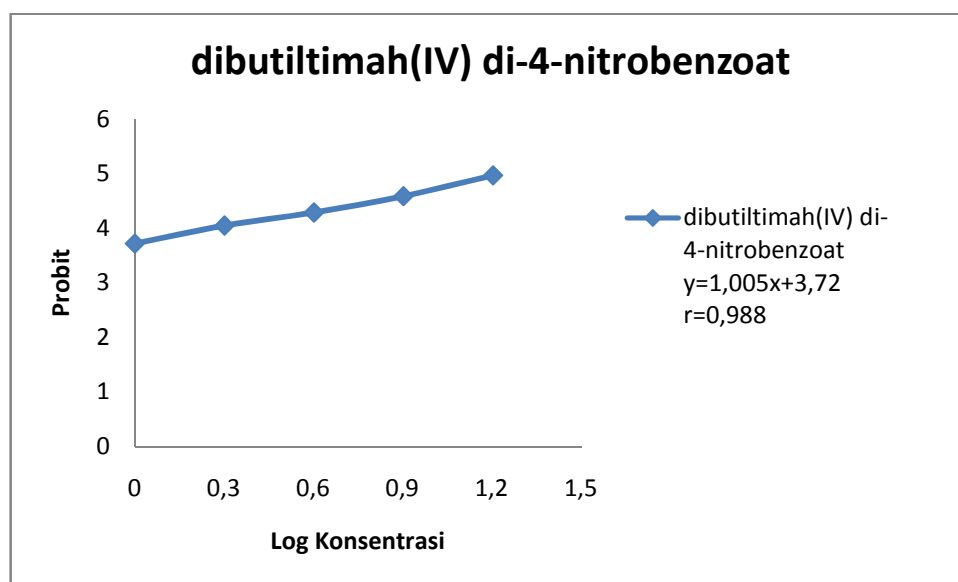
$$\sum_{sel} = \frac{\sum sel_{hidup}}{volume} = \frac{(3+4+4+5+5)sel}{0,02 \times 10^{-3} mL} = \frac{21sel}{0,02 \times 10^{-3} mL} = 10,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum_{sel \text{ rata-rata}} &= \frac{\sum sel_1 + \sum sel_2 + \sum sel_3}{3} = \frac{(10,50 + 11,00 + 10,50) \times 10^5 \text{ sel} / mL}{3} \\ &= 10,67 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum sel_{rata-rata}} \right) \times 100\% = \left(1 - \frac{10,67}{21,00} \right) \times 100\% = 49,19 \%$$

Konsentrasi ($\mu\text{g/mL}$)	% Inhibisi	Log Konsentrasi	Probit
1	9,52	0,0000	3,72
2	17,14	0,3010	4,05
4	23,82	0,6021	4,29
8	34,10	0,9031	4,59
16	49,19	1,2041	4,97

Selanjutnya data presentase inhibisi diplotkan ke tabel probit untuk memperoleh nilai probit. Kemudian dibuat grafik antara log konsentrasi (x) dan probit (y) sehingga diperoleh persamaan regresi linear $y = a + bx$.



Dengan memasukkan nilai $y = 5$ (probit dari 50%), maka diperoleh nilai x (log konsentrasi), selanjutnya nilai IC_{50} diperoleh dengan mengkonversikan nilai log konsentrasi ke bentuk anti log:

$$y = 1,005x + 3,72$$

$$5 = 1,005x + 3,72$$

$$1,005x = 1,28$$

$$x = 1,274$$

Log C	1,274
IC₅₀	18,7
R	0,9969

Nilai IC₅₀ untuk senyawa dibutyltin(IV) di-4-nitrobenzoat adalah 18,7

2. Difeniltimah(IV) Di-4-nitrobenzoat

Konsentras i (µg/ml)	SEL HIDUP					Σ sel/mL (10 ⁵)	Rata- rata \square Σ sel/mL (10 ⁵)	% Sel hidup	% Inhibis i
	I	II	III	IV	V				
K-	9	9	8	9	7	21,00	21,00	100	
	7	9	9	9	8	21,00			
	8	7	9	9	9	21,00			
1	8	7	8	7	9	19,50	18,67	88,90	11,09
	7	8	7	7	7	18,00			
	7	8	8	7	7	18,50			
2	7	7	7	8	7	17,50	17,16	81,71	18,28
	7	8	7	7	6	17,50			
	6	7	7	7	5	16,50			
4	7	6	5	6	6	15,00	15,00	71,42	28,57
	6	6	6	6	5	14,50			
	6	6	6	6	7	15,50			
8	5	5	4	5	4	11,50	11,00	52,38	47,61
	4	5	4	5	5	11,50			
	4	4	4	4	4	10,00			
16	2	3	4	5	1	7,50	7,16	34,09	65,90
	1	4	3	5	2	7,50			
	2	2	1	5	3	6,50			

Konsentrasi 0 ppm :

$$\Sigma sel_1 = \frac{\sum sel_{hidup}}{volume} = \frac{(9 + 9 + 8 + 9 + 7)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\Sigma sel_2 = \frac{\sum sel_{hidup}}{volume} = \frac{(7 + 9 + 9 + 9 + 8)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\Sigma sel_3 = \frac{\sum sel_{hidup}}{volume} = \frac{(8 + 7 + 9 + 9 + 9)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \Sigma sel \text{ rata-rata} &= \frac{\sum sel_1 + \sum sel_2 + \sum sel_3}{3} = \frac{(21,00 + 21,00 + 21,00) \times 10^5 \text{ sel} / mL}{3} \\ &= 21,00 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{21,00}{21,00} \right) \times 100\% = 0 \%$$

Konsentrasi 1 ppm :

$$\sum \text{sel}_1 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(8+9+7+8+7)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{39\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 19,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_2 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(6+7+8+7+8)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{36\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 18,00 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_3 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(7+8+7+8+9)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{37\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 18,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(19,50 + 18,00 + 18,50) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 18,67 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{18,67}{21,00} \right) \times 100\% = 11,09 \%$$

Konsentrasi 2 ppm :

$$\sum \text{sel}_1 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(8+7+7+7+6)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{35\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 17,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_2 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(6+7+8+7+7)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{35\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 17,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_3 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(7+6+7+7+5)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{32\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 16,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(17,50 + 17,50 + 16,50) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 17,16 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{17,16}{21,00} \right) \times 100\% = 18,28\%$$

Konsentrasi 4 ppm :

$$\sum \text{sel}_1 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(6 + 7 + 6 + 6 + 5)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{30\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 15,00 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_2 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(6 + 6 + 7 + 6 + 6)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{31\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 15,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel}_3 = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(5 + 6 + 5 + 6 + 7)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{29\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 14,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(15,00 + 15,50 + 14,50) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 15,00 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{15,00}{21,00} \right) \times 100\% = 28,57 \%$$

Konsentrasi 8 ppm :

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(5 + 5 + 4 + 5 + 4)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{23\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 11,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(4 + 5 + 4 + 5 + 5)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{23\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 11,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(4 + 4 + 4 + 4 + 4)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{20\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 10,00 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(11,50 + 11,50 + 10,00) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 11,00 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{11,00}{21,00} \right) \times 100\% = 47,61 \%$$

Konsentrasi 16 ppm :

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(5 + 4 + 1 + 3 + 2)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{15 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 7,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(4 + 5 + 2 + 1 + 3)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{15 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 7,50 \times 10^5 \text{ sel/mL}$$

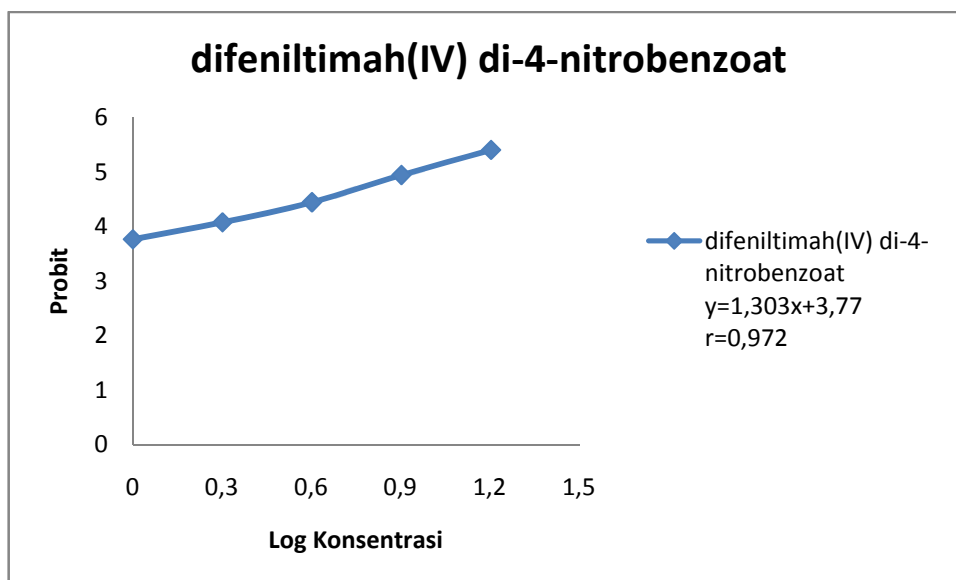
$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(3 + 2 + 2 + 5 + 1)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{13 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 6,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(7,50 + 7,50 + 6,50) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 7,16 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{7,16}{21,00} \right) \times 100\% = 65,90 \%$$

Konsentrasi ($\mu\text{g/mL}$)	% Inhibisi	Log Konsentrasi	Probit
1	11,09	0,0000	3,77
2	18,28	0,3010	4,08
4	28,57	0,6021	4,45
8	47,61	0,9031	4,95
16	65,90	1,2041	5,41

Selanjutnya data presentase inhibisi diplotkan ke tabel probit untuk memperoleh nilai probit. Kemudian dibuat grafik antara log konsentrasi (x) dan probit (y) sehingga diperoleh persamaan regresi linear $y = a + bx$.



Dengan memasukan nilai $y = 5$ (probit dari 50%), maka diperoleh nilai x (log konsentrasi), selanjutnya nilai IC_{50} diperoleh dengan mengkonversikan nilai log konsentrasi ke bentuk anti log:

$$y = 1,303x + 3,77$$

$$5 = 1,303x + 3,77$$

$$1,303x = 1,23$$

$$x = 0,944$$

Log C	0,941
IC₅₀	8,8
R	0,9954

Nilai IC_{50} untuk senyawa difeniltimah(IV) 4-nitrobenzoat adalah 8,8

3. Trifeniltimah(IV) 4-nitrobenzoat

Konsentrasi (µg/mL)	SEL HIDUP					Σ sel/mL (10 ⁵)	Rata-rata Σ sel/mL (10 ⁵)	% Sel hidup	% Inhibisi
	I	II	III	IV	V				
K-	9	9	8	9	7	21,00	21,00	100	
	7	9	9	9	8	21,00			
	8	7	9	9	9	21,00			
1	5	7	7	6	4	14.50	14,30	68,09	31,90
	6	6	7	4	5	14.00			
	4	5	7	7	6	14.50			
2	5	5	6	4	4	12,00	11,67	55,57	44,42
	6	5	5	4	3	11,50			
	4	3	5	6	5	11,50			
4	2	5	3	4	2	8.00	8,40	40,00	60,00
	3	2	3	5	4	8.50			
	5	3	4	2	3	8.50			
8	2	2	3	3	1	5.50	5,00	23.80	76,19
	3	3	1	2	2	5.50			
	2	1	1	1	3	4.00			
16	1	1	1	2	0	2.50	2.33	11.09	88,90
	1	1	1	1	0	2.00			
	1	1	2	0	1	2.50			

Konsentrasi 0 ppm :

$$\Sigma_{sel_1} = \frac{\sum sel_{hidup}}{volume} = \frac{(9 + 9 + 8 + 9 + 7)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\Sigma_{sel_2} = \frac{\sum sel_{hidup}}{volume} = \frac{(7 + 9 + 9 + 9 + 8)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\Sigma_{sel_3} = \frac{\sum sel_{hidup}}{volume} = \frac{(8 + 7 + 9 + 9 + 9)sel}{0,02 \times 10^{-3} mL} = \frac{42sel}{0,02 \times 10^{-3} mL} = 21,00 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \Sigma_{sel \text{ rata-rata}} &= \frac{\sum sel_1 + \sum sel_2 + \sum sel_3}{3} = \frac{(21,00 + 21,00 + 21,00) \times 10^5 \text{ sel} / mL}{3} \\ &= 21,00 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{21,00}{21,00} \right) \times 100\% = 0 \%$$

Konsentrasi 1 ppm :

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(5 + 7 + 7 + 6 + 4) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{29 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 14,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(6 + 7 + 6 + 4 + 5) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{28 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 14,00 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(7 + 7 + 5 + 4 + 6) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{29 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 14,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(14,50 + 14,00 + 14,50) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 14,30 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{14,30}{21,17} \right) \times 100\% = 31,90 \%$$

Konsentrasi 2 ppm :

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(5 + 4 + 6 + 5 + 4) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{24 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 12,00 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(6 + 5 + 5 + 4 + 3) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{23 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 11,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(4 + 3 + 5 + 6 + 5) \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{23 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 11,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(12,00 + 11,50 + 11,50) \times 10^5 \text{ sel} / \text{mL}}{3} \\ &= 11,67 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{11,67}{21,00} \right) \times 100\% = 44,42\%$$

Konsentrasi 4 ppm :

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(2 + 3 + 4 + 5 + 2)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{16 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 8,00 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(3 + 2 + 3 + 5 + 4)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{17 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 8,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(5 + 3 + 2 + 4 + 3)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{17 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 8,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(8,00 + 8,50 + 8,50) \times 10^5 \text{ sel / mL}}{3} \\ &= 8,40 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{8,40}{21,00} \right) \times 100\% = 60,00 \%$$

Konsentrasi 8 ppm :

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(2 + 2 + 3 + 3 + 1)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{11 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 5,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(3 + 3 + 1 + 2 + 2)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{11 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 5,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(2 + 1 + 1 + 1 + 3)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{8 \text{ sel}}{0,02 \times 10^{-3} \text{ mL}} = 4,00 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(5,50 + 5,50 + 4,00) \times 10^5 \text{ sel / mL}}{3} \\ &= 5,00 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{5,00}{21,00} \right) \times 100\% = 76,19 \%$$

Konsentrasi 16 ppm :

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(1+1+1+2+0)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{5\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 2,50 \times 10^5 \text{ sel/mL}$$

$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(1+1+1+1+0)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{4\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 2,00 \times 10^5 \text{ sel/mL}$$

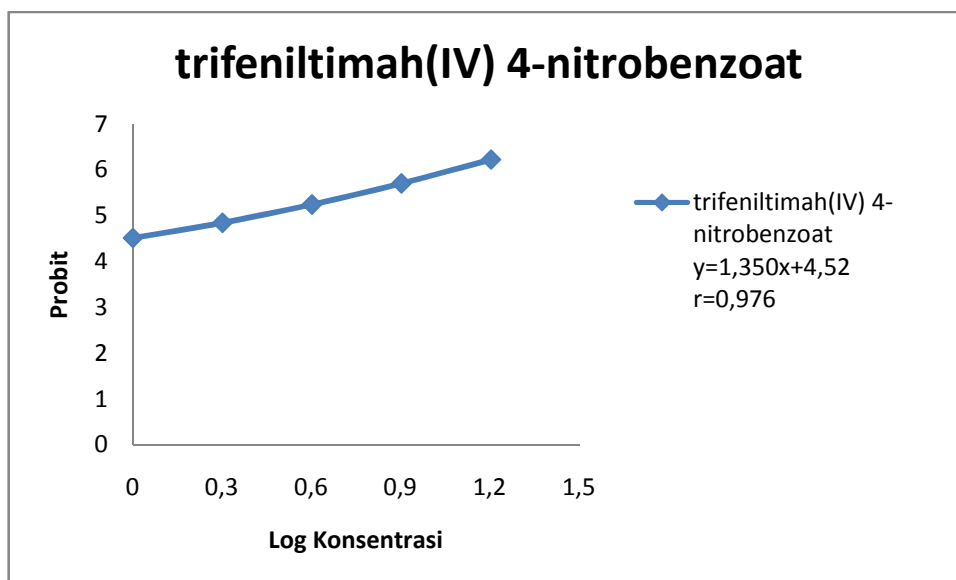
$$\sum \text{sel} = \frac{\sum \text{selhidup}}{\text{volume}} = \frac{(1+2+1+0+1)\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = \frac{5\text{sel}}{0,02 \times 10^{-3} \text{ mL}} = 2,50 \times 10^5 \text{ sel/mL}$$

$$\begin{aligned} \sum \text{sel rata-rata} &= \frac{\sum \text{sel}_1 + \sum \text{sel}_2 + \sum \text{sel}_3}{3} = \frac{(2,00 + 2,50 + 2,50) \times 10^5 \text{ sel / mL}}{3} \\ &= 2,33 \times 10^5 \text{ sel/mL} \end{aligned}$$

$$\% \text{ inhibisi} = \left(1 - \frac{A}{\sum \text{selrata} - \text{rata}} \right) \times 100\% = \left(1 - \frac{2,24}{21,00} \right) \times 100\% = 88,90\%$$

Konsentrasi (µg/mL)	% Inhibisi	Log Konsentrasi	Probit
1	31,90	0,0000	4,52
2	44,42	0,3010	4,85
4	60,00	0,6021	5,25
8	76,19	0,9031	5,71
16	88,90	1,2041	6,23

Selanjutnya data presentase inhibisi diplotkan ke tabel probit untuk memperoleh nilai probit. Kemudian dibuat grafik antara log konsentrasi (x) dan probit (y) sehingga diperoleh persamaan regresi linear $y = a + bx$.



Dengan memasukan nilai $y = 5$ (probit dari 50%), maka diperoleh nilai x (log konsentrasi), selanjutnya nilai IC_{50} diperoleh dengan mengkonversikan nilai log konsentrasi ke bentuk anti log:

$$y = 1,350x + 4,52$$

$$5 = 1,350x + 4,52$$

$$1,350x = 0,48$$

$$x = 0,356$$

Log C	0,356
IC₅₀	2,27
R	0,9959

Nilai IC_{50} untuk senyawa trifeniltimah(IV) 4-nitrobenzoat adalah 2,27