

DAFTAR PUSTAKA

- Arandjelovic Sanja dan Ravichandran Kodi S. 2015. Phagocytosis of apoptotic cells in homeostasis. *Nature Immunology*. 16: 907-917
- Chen P, Tu X, FAKdemir, Chew SK, Rothenfluh A and JM Abrams. 2012. Effectors of alcohol-induced cell killing in *Drosophila*. *Cell Death and Differentiation* (2012) 19; doi: 10.1038/cdd.2012.47; Published online 27 April 2012:1655-1663
- Dasgupta, A. 2015. Alcohol and its Biomarkers. San Diego: *Elsevier*. doi: 10.1016/C2013-0-18538-8.
- Demerec, M. and Kaufmann, B. P. 1986. *Drosophila* guide Introduction to the genetics and cytology of *Drosophila melaogaster* Carnegie Institution of Washington. *Tenth Eddition. First published in 1940*
- Deviani, A. V and Heberlein, U. 2012. Acute ethanol responses in *Drosophila* are sexually dimorphic. *Proceedings of the National Academy of the United States of America*. National Academy of Sciences. 109(51). Pp. 21087-922. Doi: 10.1073/pnas.1218850110.
- Edwin. 2018. *Pengaruh Reseptor Fagositosis Draper Terhadap Kematian Drosophila melanogaster yang Terpapar Alkohol*. Skripsi tidak diterbitkan. Makassar. Fakultas Farmasi Universitas Hasanuddin.
- Elliott Michael R and Ravichandran Kodi S. 2016. The Dynamics of Apoptotic Cell Clearance. *Developmental cell*. (Online). 38(2); 147-160. (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4966906/>, diakses 25 Juli2016)
- Elmore, S. 2007. Apoptosis: A Review of Programmed Cell Deth' *Toxicologic Pathologic*. SAGE Publications, 35(4), pp. 495-516. Doi: 10.1080/01926230701320337.
- Engel Gregory L, Taber Kreager, Vinton Elizabeth and Crocker Amanda J. 2019. Studying Alcohol Use Disorder Using *Drosophila Melanogaster* in the Era of Big Data. *Behavioraland Brain Functions*. (Online). (<https://doi.org/10.1186/s12993-019-0159-x>, diakses2019).



san L. and Cookson Brad T.2005 Apoptosis, Pyroptosis, and necrosis: Mechanistic Description of Dead and Dying Eukaryotic cells. *American Society for Microbiology*. p. 1907–1916 Vol. 73, no. 4 0019-9567/05/\$08.000doi:10.1128/IAI.73.4.1907–1916.2005.

Freeman *et al.*, 2003. Unwrapping Glial Biology: Gcm Target Genes Regulating Glial Development, Diversification, and Function. *Cell Press Neuron*, Vol. 38, 567–580,

Giacomotto, J., & Ségalat, L. 2010. High-throughput screening and small animal models, where are we? *Br J Pharmacol.*, 160(2), 204-216. doi: doi:10.1111/j.1476-5381.2010.00725.

Guarnieri Douglas. J. and Heberlein Ulrike. 2003. *Drosophila Melanogaster*, a Genetic Model System for Alcohol Research. *National Center for Biotechnology Information*. (Online). 54, 199-228. (<https://pubmed.ncbi.nlm.nih.gov/12785288-drosophilamelanogaster-a-genetic-model-system-for-alcohol-research/>. Diakses 2003)

Gordon Siamob and Pluddemann Annette. 2018. Macrophage Clearance of Apoptotic Cells: A Critical Assessment. *Molecular Innate Immunity*. (Online). (<https://doi.org/10.3389/fimmu.2018.00127>, diakses 30 Januari 2018)

Hockenbery, D. 1995. Defining apoptosis. *Am. J. Pathol.* 146:16–19.

Homila Marja and Raitasalo Kirsimarja. 2005. Gender differences in drinking: why do they still exist?. *Centre for Welfare and Health*. Doi:10.1111/j.13600-0443.2005.01249.x

Kang Hyunsook, *et al.* 2020. Impaired Glycolysis Promotes Alcohol Exposure-Induced Apoptosis in HEI-OCI Cells via Inhibition of EGFR Signaling. *International Journal of Molecular Sciences*. Int. j. Mol. Sei. 2020, 21, 476; doi:10.3390.

Lilies. C. 2014. Kunci Determinasi Serangga. *Kanisius*. Yogyakarta.

Los, M., S. Wesselborg, and K. Schulze-Osthoff. 1999. The role of caspases in development, immunity, and apoptotic signal transduction: lessons from knockout mice. *Immunity*. 10:629–639.

Nainu, F., Tanaka, Y., Shiratsuchi, A., & Nakanishi, Y. 2015. Protection of insects against viral infection by apoptosisdependent phagocytosis. *J Immunol*. 195(12), 5696-5706. doi: 10.1093/jimmunol.1500613.

Shiratsuchi, A., & Nakanishi, Y. 2017. Induction of apoptosis and subsequent phagocytosis of virus-infected cells as an antiviral



mechanism. *Front Immunol.*, 8(1220). doi: 10.3389/fimmu.2017.01220.

Nainu, F. 2018. Review Penggunaan *Drosophila melanogaster* Sebagai Organisme Model Dalam Penemuan Obat, *Jurnal Farmasi Galenika*, 4(1): 50 – 67.

Nagaosa, K., Okada, R., Nonaka, S., Takeuchi., K., Fujita, Y., Miyasaka , T., Manaka, J., Ando, I. and Nakanishi, Y. 2011. Integrin β V-mediated phagocytosis of apoptotic cells in *Drosophila* embryos. *J Biol Chem.* . 286(29): p. 25770-25777.

Neckameyer, W. S and Bhatt, P. 2016. Protocols to study behavior in *Drosophila*. In Dahmann, C (ed). *Drosophila* Methods and Protocols. Humana Press.P311-312

Nichols, C.D, Becnel j, Pandey, U.B. 2012. Methods to assay *Drosophila* behavior, *J. Vis Exp.* 61: e3795.

Nonaka, S., Ando, Y., Kanetani, T., Hoshi, C., Nakai, Y., Nainu, F., et al. 2017. Signaling pathway for phagocyte priming upon encounter with apoptotic cells. *J Biol Chem.* doi: 10.1074/jbc.M116.769745

Manaka Junko, Kuraishi Takayuki, Shiratsuchi Akiko, Nakai Yuji, Higashida Haruhiro, Henson Peter, and Yoshinobu Nakanishi. 2004. Draper-mediated and Phosphatidylserine-independent Phagocytosis of Apoptotic Cells by *Drosophila* Hemocytes/Macrophages. *Journal of Biological Chemistry.* doi: 10.1074/jbc.M408597200 (1):48466-48476.

Markow, T. A. 2015. The secret lives of *Drosophila* flies. *eLife*, 4, e06793. doi: 10.7554/eLife.06793.

Meier, P., Finch, A., & Evan, G. 2000. Apoptosis in development. *Nature*, 407, 796. doi: 10.1038/35037734

Pandey, U. B. and Nichols, C.D. 2011. Human disease models in *Drosophila melanogaster* and the role of the fly in therapeutic drug discovery. *Pharmacological reviews.* American Society for Pharmacology and Experimental Therapeutics, 63(2), pp. 411-36. doi: 10.1124/pr.110.003293.

, C. J., & Sokolowski, M. B. 2006. The nature of *Drosophila melanogaster*. *Curr Biol.*, 16(16), R623-R628. doi: <https://doi.org/10.1016/j.cub.2006.07.042>



- Qian Zeng., Ma Aiyang, Yuan Lei, Gao Ning, Feng Qi, Franc Nathalie and Xiao Hui. 2017. Apoptotic Cell Clearance in *Drosophila Melanogaster*. Published : 20 December 2017. doi: 10.3389/fimmu.2017.01881.
- Rodan Aylin R. and Rothenfluh Adrian. 2010. The Genetics of Behavioral Alcohol Responses in *Drosophila*. *Int Rev Neurobiol.* 2010 ; 91: 25–51. doi:10.1016/S0074-7742(10)91002-7.
- Rodriguez Ana, Chawla Karan, Burke Mark. W. 2015. Alcohol and Apoptosis: Friends or Foes?. *MDPI. Biomolecules.* Dec: 5(4): 3193-3203.
- Steller H. 2008. Regulation of Apoptosis in *Drosophila*. *Cell Death & Differentiation.* (Online). 15, 1132-1138. (<https://www.nature.com/articles/cdd200850>, diakses 25 April 2008)
- Stuart, L. M. and Ezekowitz, R. A. 2008. Phagocytosis and comparative innate immunity: Learning on the fly. *Nature Reviews Immunology.* 8(2), pp. 131-141. doi: 10.1038/nri2240.
- Strange, K. 2016. Drug discovery in fish, flies, and worms. *ILAR J.*, 57(2), 133-143. doi: 10.1093/ilar/ilw034
- Tabakoff Band Hoffman P.L. 2000. Animals Models in Alcohol Research. *National Center for Biotechnology Information.* (online). Vol. 24.No. 2. (<https://pubmed.ncbi.nlm.nih.gov/11199281-animal-models-in-alcohol-research/>, diakses 2000)
- Takada, Y., Ye, X. and Simon, S. 2007. The Integrins. *Genome Biol.* . 8(5), p.215
- Tung Tran Thanh, Nagaosa Kaz, Fujita Yu, Kita Asana, Mori Hiroki, Okada Ryo, Nonaka Saori, and Nakanishi Yoshinobu. 2013. Phosphatidylserine recognition and induction of apoptotic cell clearance by *Drosophila* engulfment receptor Draper. *The Journal of Biochemistry.* 153 (5):483-491.
- Weber, K. E. 1988. An apparatus for measurement of resistance to gasphase reagents. *Drosophila melanogaster Information Service*
- Wolk FM, Rodan AR, Tsai LT, Heberlein U. 2002 High-resolution analysis of ethanol-induced locomotor Stimulation in *Drosophila*. *Journal of neuroscience.*; 22:11044.

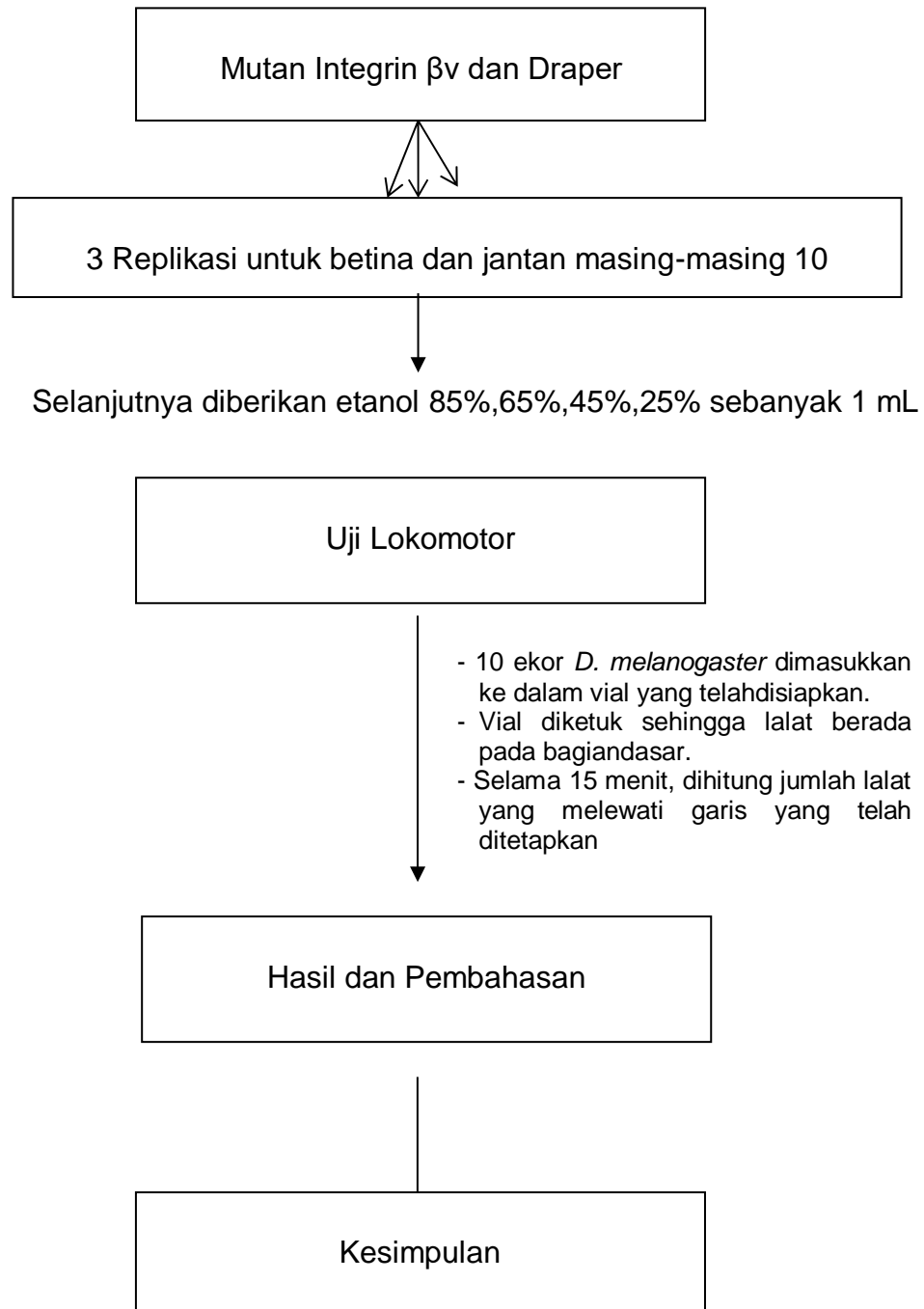


- Wong Rebecca, SY. 2011. Apoptosis in cancer: from pathogenesis to treatment Wong *Journal of Experimental & Clinical Cancer Research*. 30:87 <http://www.jeccr.com/content/30/1/87>.
- World Health Organization. 2005. *Alkohol, Gender and Drinking problems*. Department of Mental Health and Substance Abuse, Geneva. ISBN 92 4 156302 8
- World Health Organization. 2011 *The global status report on alcohol and health*. Geneva: World Health Organization Press;
- World Health Organization. 2014 *Global status report on alcohol and health*. Luxembourg: World Health Organization Press.
- Xu Xuebo *et al.* 2019. Apoptosis and apoptotic body: disease message and therapeutic target potentials. *State Key Laboratory of Pharmaceutical Biotechnology, School of life Sciences, Nanjing University*.<https://doi.org/10.1042/BSR20180992>
- Yee Tee Sui. 2010. Optimalization of Fruit Fly (*Drosophila melanogaster*) Culture Media for Higher Yield of Spring. *Bachelor of Science (Hons) Biotechnology*.
- Zakari, S. 2006 'Overview. How is alkohol metabolized by the body?', *Alcohol Research & Health*. U.S Government Printing Office (Accessed; 30 March 2018).
- Zheng Q, Ma A. Y, Yuan Lei, Gao Ning, Feng Qi, Franc N. C, & Xiao Hui. 2017. Apoptotic Cell Clearance in *Drosophila melanogaster*. *Frontiers in Immunology* 8(1): pp 2

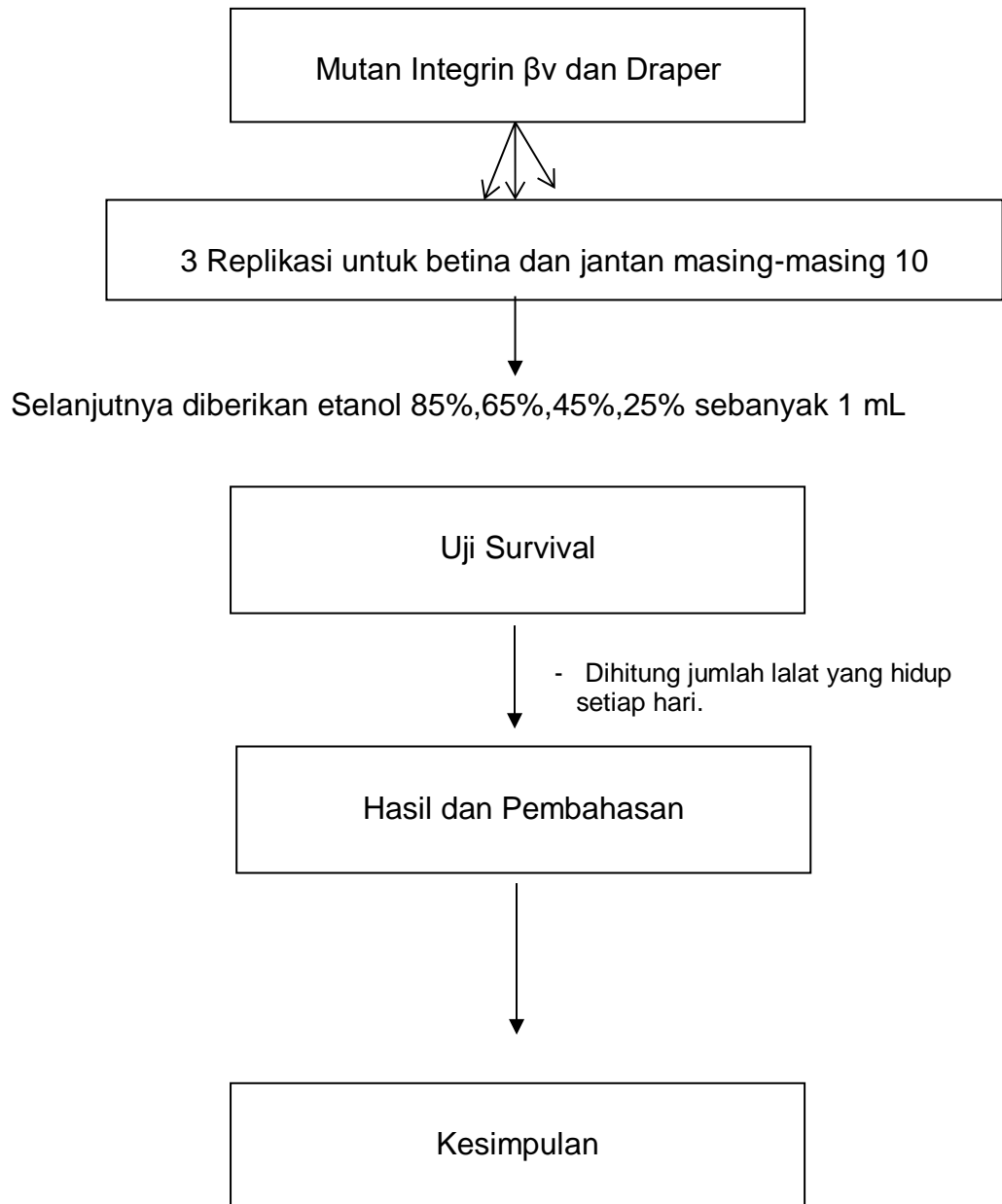


Lampiran 1. Skema Kerja

Uji Lokomotor



Pengujian Survival *Drosophilamelagaster*



Lampiran 2. Gambar Penelitian



Gambar 15. Pengujian Lokomotor



Gambar 16. Pengujian Survival



Gambar 17. Pembiusan *Drosophila melanogaster*



Gambar 18. Memisahkan jantan dan betina menggunakan mikroskop



Gambar 19. Pembuatan pakan



Lampiran 3. Data lokomotor Konsentrasi 85%, 65%, 45%, 25% jenis w^{1118} dan $itgbn^2;drpr^{\Delta 5}$ jantan.

2way ANOVA Multiple comparisons									
1	Compare each cell mean with the other cell mean in that column								
2									
3	Number of families	1							
4	Number of comparisons per family	4							
5	Alpha	0.05							
6									
7	Sidak's multiple comparisons test	Predicted (LS) mean diff.	95.00% CI of diff.	Significant?	Summary	Adjusted P Value			
8									
9	w^{1118} - mutan $itgbn;drpr$								
10	EtOH 85%	56.67	17.60 to 95.73	Yes	**	0.0049			
11	EtOH 65%	30.00	-9.064 to 69.06	No	ns	0.1628			
12	EtOH 45%	31.67	-7.398 to 70.73	No	ns	0.1319			
13	EtOH 25%	0.000	-42.79 to 42.79	No	ns	>0.9999			
14									
15									
16	Test details	Predicted (LS) mean 1	Predicted (LS) mean 2	Predicted (LS) mean diff.	SE of diff.	N1	N2	t	DF
17									
18	w^{1118} - mutan $itgbn;drpr$								
19	EtOH 85%	70.00	13.33	56.67	13.15	2	3	4.309	11.00
20	EtOH 65%	60.00	30.00	30.00	13.15	2	3	2.281	11.00
21	EtOH 45%	85.00	53.33	31.67	13.15	2	3	2.408	11.00
22	EtOH 25%	55.00	55.00	0.000	14.41	2	2	0.000	11.00
23									



Lampiran 4. Data lokomotor Konsentrasi 85%, 65%, 45%, 25% jenis w^{1118} dan $itgbn^2;drpr^{\Delta 5}$ betina.

4	Number of comparisons per family	4							
5	Alpha	0.05							
6									
7	Sidak's multiple comparisons test	Mean Diff.	95.00% CI of diff.	Significant?	Summary	Adjusted P Value			
8									
9	w^{1118} - mutan $itgbn;drpr$								
10	EtOH 85%	23.33	-12.86 to 59.53	No	ns	0.3129			
11	EtOH 65%	0.000	-36.20 to 36.20	No	ns	>0.9999			
12	EtOH 45%	0.000	-36.20 to 36.20	No	ns	>0.9999			
13	EtOH 25%	13.33	-22.86 to 49.53	No	ns	0.7825			
14									
15									
16	Test details	Mean 1	Mean 2	Mean Diff.	SE of diff.	N1	N2	t	DF
17									
18	w^{1118} - mutan $itgbn;drpr$								
19	EtOH 85%	60.00	36.67	23.33	12.91	3	3	1.807	16.00
20	EtOH 65%	53.33	53.33	0.000	12.91	3	3	0.000	16.00
21	EtOH 45%	53.33	53.33	0.000	12.91	3	3	0.000	16.00
		50.00	36.67	13.33	12.91	3	3	1.033	16.00



Lampiran 5. Data *Survival Assay* Konsentrasi 85% jenis w^{1118} dan $itgbn^2;drpr^{\Delta 5}$ jantan dan betina.

Survival Curve comparison		A	B	C	D	E	F	G	H	I	J	K
1	Comparison of Survival Curves											
2												
3	Log-rank (Mantel-Cox) test (recommended)											
4	Chi square	8.745										
5	df	3										
6	P value	0.0329										
7	P value summary	*										
8	Are the survival curves sig different?	Yes										
9												
10	Logrank test for trend (recommended)											
11	Chi square	7.888										
12	df	1										
13	P value	0.0050										
14	P value summary	**										
15	Sig. trend?	Yes										
16												
17	Gehan-Breslow-Wilcoxon test											
18	Chi square	8.369										
19	df	3										
20	P value	0.0390										
		*										
	curves sig different?	Yes										



Lampiran 6. Data *Survival Assay* Konsentrasi 65% jenis w^{1118} dan $itgbn^2;drpr^{\Delta 5}$ jantan dan betina.

Survival Curve comparison		A	B	C	D	E	F	G	H	I	J	K
1	Comparison of Survival Curves											
2												
3	Log-rank (Mantel-Cox) test (recommended)											
4	Chi square	3.348										
5	df	3										
6	P value	0.3410										
7	P value summary	ns										
8	Are the survival curves sig different?	No										
9												
10	Logrank test for trend (recommended)											
11	Chi square	1.055										
12	df	1										
13	P value	0.3044										
14	P value summary	ns										
15	Sig. trend?	No										
16												
17	Gehan-Breslow-Wilcoxon test											
18	Chi square	2.328										
19	df	3										
20	P value	0.5072										
21	P value summary	ns										
22	Are the survival curves sig different?	No										



Lampiran 7. Data *Survival Assay* Konsentrasi 45% jenis w^{1118} dan $itgbr^2;drpr^{\Delta 5}$ jantan dan betina.

Survival Curve comparison		A	B	C	D	E	F	G	H	I	J	K	L
1	Comparison of Survival Curves												
2													
3	Log-rank (Mantel-Cox) test (recommended)												
4	Chi square	39.91											
5	df	3											
6	P value	<0.0001											
7	P value summary	****											
8	Are the survival curves sig different?	Yes											
9													
10	Logrank test for trend (recommended)												
11	Chi square	4.411											
12	df	1											
13	P value	0.0357											
14	P value summary	*											
15	Sig. trend?	Yes											
16													
17	Gehan-Breslow-Wilcoxon test												
18	Chi square	38.26											
19		3											
20		<0.0001											
21		****											
22	Are the survival curves sig different?	Yes											



Lampiran 8. Data *Survival Assay* Konsentrasi 25% jenis w^{1118} dan $itgbn^2;drpr^{\Delta 5}$ jantan dan betina.

Survival Curve comparison		A	B	C	D	E	F	G	H	I	J	K	L
1	Comparison of Survival Curves												
2													
3	Log-rank (Mantel-Cox) test (recommended)												
4	Chi square	5.798											
5	df	3											
6	P value	0.1218											
7	P value summary	ns											
8	Are the survival curves sig different?	No											
9													
10	Logrank test for trend (recommended)												
11	Chi square	3.478											
12	df	1											
13	P value	0.0622											
14	P value summary	ns											
15	Sig. trend?	No											
16													
17	Gehan-Breslow-Wilcoxon test												
18	Chi square	5.280											
19	df	3											
20		0.1524											
21		ns											
22	Are the survival curves sig different?	No											

