

DAFTAR PUSTAKA

1. Torre LA, Bray F, Siegel RL, Ferlay J, Lortet-Tieulent J, Jemal A. Global cancer statistics, 2012. CA Cancer J Clin. 2015 Mar;65:87–108.
2. Data Rekam Medis Rumah Sakit Kanker Dharmais,Jakarta.
3. Gradishar WJ, Anderson BO, Balassanian R, Blair SL, Burstein HJ, Cyr A, et al. NCCN Guidelines[®] Insights. Breast Cancer, Version 1.2017. J Natl Compr Canc Netw.2017;15:433–51.
4. Harvey JM, Clark GM, Osborne CK, Allred DC. Estrogen receptor status by immunohistochemistry is superior to the ligand binding assay for predicting response to adjuvant endocrine therapy in breast cancer. J Clin Oncol.1999;17:1474–81.
5. Miller WR, Bartlett JMS, Canney P, Verrill M. Hormonal therapy for postmenopausal breast cancer: the science of sequencing. Breast Cancer Res Treat.2007;103:149–60.
6. Early Breast Cancer Trialists' Collaborative Group. Tamoxifen for early breast cancer: an overview of the randomized trials. Lancet 1998;351:1451–67.
7. Ali S, Coombes RC. Endocrine-responsive breast cancer and strategies for combating resistance. Nature Rev Cancer. 2002;2:101–12.
8. García-Becerra R, Santos N, Díaz L, Camacho J. Mechanisms of resistance to endocrine therapy in breast cancer: focus on signaling pathways, miRNAs and genetically based resistance. Int J Mol Sci.2013;14:108–45.
9. Miller TE, Ghoshal K, Ramaswamy B, Roy S, Datta J, Shapiro CL,et al. MicroRNA-221/222 confers tamoxifen resistance in breast cancer by targeting p27Kip1. J Biol Chem.2008;283:29897–903.
10. Ye P, Fang C, Zeng H, Shi Y, Pan Z, An N, et al. Differential microRNA expression profiles in tamoxifen-resistant human breast cancer cell lines induced by two methods. Oncol Lett. 2018;15:3532–9.
11. Rao X, Di Leva G, Li M, Fang F, Devlin C, Hartman-Frey C, et al, MicroRNA-221/222 confers breast cancer fulvestrant resistance by regulating multiple signaling pathways. Oncogene. 2011;30:1082–97.

12. Falkenberg N, Anastasov N, Rappl K, Braselmann H Auer G, Walch A, et al. MiR-221/222 differentiate prognostic groups in advanced breast cancers and influence cell invasion. *Br J Cancer* 2013; 109: 2714-23.
13. Yoshimoto N, Toyama T, Takahashi S, Sugiura H, Endo Y, Iwasa M, et al. Distinct expressions of microRNAs that directly target estrogen receptor α in human breast cancer. *Breast Cancer Res Treat*. 2011;130:331–9.
14. Medina R, Zaidi SK, Liu C-G, Stein JL, vanWijnen AJ, Croce CM, et al. MicroRNAs 221 and 222 bypass quiescence and compromise cell survival. *Cancer Res*. 2008;68:2773–80.
15. Gan R, Yang Y, Yang X, Zhao L, Lu J, Meng QH. Downregulation of miR-221/222 enhances sensitivity of breast cancer cells to tamoxifen through upregulation of TIMP3. *Cancer Gene Ther*. 2014;2014:1–7.
16. Amorim M, Salta S, Henrique R, Jerónimo C. Decoding the usefulness of non-coding RNAs as breast cancer markers. *J Transl Med*. 2016;14:265.
17. Torre LA, Siegel RL, Ward EM, Jemal A. Global Cancer Incidence and Mortality Rates and Trends – An Update. *Cancer Epidemiol Biomarkers Prev*. 2016;25:16–27.
18. Torre LA, Islami F, Siegel R, Ward EM, Jemal A. Global cancer in women: burden and trends. *Cancer Epidemiol Biomarkers Prev*. 2017;26:444–57.
19. Perou CM, Sørile T, Eisen MB, van de Rijn M, Jeffrey SS, Rees CA, et al. Molecular portraits of human breast tumours. *Nature*. 2000;406:747–52.
20. Sørlie T, Perou CM, Tibshirani R, Aas T, Geisler S, Johnsen H, et al. Gene expression patterns of breast carcinomas distinguish tumor subclasses with clinical implications. *Proc Natl Acad Sci U S A*. 2001;98:10869–74.
21. Goldhirsch A, Wood WC, Coates AS, Gelber RD, Thürlimann B, Senn H-J and Panel members. Strategies for subtypes – dealing with the diversity of breast cancer: highlights of the St Gallen International Expert Consensus on the Primary Therapy of Early Breast Cancer 2011. *Ann Oncol*. 2011;22:1736–47.

22. Voduc KD, Cheang MC, Tyldesley S, Gelmon K, Nielsen TO, Kennecke H. Breast cancer subtypes and the risk of local and regional relapse. *J Clin Oncol* 2010;28:1684–91.
23. Webber VL, Dixon JMD. Role of endocrine therapy in ER+/HER2+ breast cancers. *Breast Cancer Management*. 2014;3:103–11.
24. Turner NC, Reis-Filho JS. Tackling the diversity of triple-negative breast cancer. *Clin Cancer Res*. 2013;19:6380–8.
25. Rahmawati Y, Setyawati Y, Widodo I, Ghozali A, Purnomosari D. Molecular subtypes of Indonesian breast carcinomas – lack of association with patient age and tumor size. *Asian Pac J Cancer Prev*. 2018;199:161–6.
26. Setyawati Y, Rahmawati Y, Widodo I, Ghozali A, Purnomosari D. The association between molecular subtypes of breast cancer with histological grade and lymph node metastases in Indonesian women. *Asian Pac J Cancer Prev*. 2017;19:1263–8.
27. Planey SL, Kumar R, Arnott JA. Estrogen receptors (ER α versus ER β): Friends or foes in human biology? *J Recept Signal Transduct Res*. 2014;34:1–5.
28. Rondon-Lagos M, Villegas VE, Rangel N, Sanchez MC, Zaphiropoulos PG. Tamoxifen resistance: emerging molecular targets. *Int J Mol Sci*. 2016;17:1357.
29. Acconcia F, Kumar R. Signaling regulation of genomic and nongenomic functions of estrogen receptors. *Cancer Lett*. 2006;238:1–14.
30. Razandi M, Pedram A, Merchenthaler I, Greene GL, Levin ER. Plasma membrane estrogen receptors exist and function as dimers. *Mol Endocrinol*. 2004;18:2854 –65.
31. Howard EW, Yang X. microRNA regulation in estrogen receptor-positive breast cancer and endocrine therapy. *Biol Procedures Online*. 2018;20:17.
32. Pan H, Gray R, Braybrooke J, Davies C, Taylor C, McGale P, et al. 20-year risks of breast-cancer recurrence after stopping endocrine therapy at 5 years. *N Engl J Med*. 2017;377:1836–46.
33. Goss PE, Ingle JN, Martino S, Robert NJ, Muss HB, Piccart MJ, et al. A randomized trial of letrozole in postmenopausal women after five

years of tamoxifen therapy for early-stage breast cancer. *N Engl J Med.* 2003;349:1793–1802.

34. Goss PE, Ingle JN, Martino S, Robert NJ, Muss HB, Piccart MJ, et al. Randomized trial of letrozole following tamoxifen as extended adjuvant therapy in receptor-positive breast cancer: updated findings from NCIC CTG MA.17. *J Natl Cancer Inst.* 2005;97:1262–71.
35. Jin H, Tu D, Zhao N, Shepherd LE, Goss PE. Longer-term outcomes of letrozole versus placebo after 5 years of tamoxifen in the NCIC CTG MA.17 trial: analyses adjusting for treatment crossover. *J Clin Oncol.* 2012;30:718–21.
36. Davies C, Pan H, Godwin J, Gray R, Arriagada R, Raina V, et al. Long-term effects of continuing adjuvant tamoxifen to 10 years versus stopping at 5 years after diagnosis of oestrogen receptor-positive breast cancer: ATLAS, a randomised trial. *Lancet.* 2013;381:805–16.
37. Cole MP, Jones CTA, Todd IDH. A new antioestrogenic agent in late breast cancer. An early clinical appraisal of ICI 46474. *Br J Cancer.* 1971;25:270–5.
38. Chang M. Tamoxifen resistance in breast cancer. *Biomol Ther.* 2012;20:256–67.
39. Park W-C, Jordan VC. Selective estrogen receptor modulators (SERMs) and their roles in breast cancer prevention. *Trends Mol Med.* 2002;8:82–8.
40. Clarke R, Skaar TC, Bouker KB, Davis N, Lee YR, Welch JN, et al. Molecular and pharmacological aspects of antiestrogen resistance. *J Steroid Biochem Mol Biol.* 2001;76:71–84.
41. Beelen K, Zwart W, Linn SC. Can predictive biomarkers in breast cancer guide adjuvant endocrine therapy? *Nat Rev Clin Oncol.* 2012;9:529–41.
42. Selli C, Dixon JM, Sims AH. Accurate prediction of response to endocrine therapy in breast cancer patients: current and future biomarkers. *Breast Cancer Res.* 2016;18:118.
43. Jordan VC, O'Malley BW. Selective estrogen-receptor modulators and antihormonal resistance in breast cancer. *J Clin Oncol.* 2007;25:5815–24.
44. Davies C, Godwin J, Gray R, Clarke M, Cutter D, Darby S, et al for

the Early Breast Cancer Trialists' Collaborative Group (EBCTCG). Relevance of breast cancer hormone receptors and other factors to the efficacy of adjuvant tamoxifen: patient-level meta-analysis of randomized trials. *Lancet.* 2011;378:771–84.

45. Cardoso F, Costa A, Senkus E, Aapro M, Andre F, Barrios CH, et al. 3rd ESO-ESMO International Consensus Guidelines for advanced breast cancer (ABC3). *Breast.* 2017;31:244–59.
46. Weigel RJ, deConinck EC. Transcriptional control of estrogen receptor in estrogen receptor-negative breast carcinoma. *Cancer Res.* 1993;53:3472–4.
47. Badia E, Oliva J, Balaguer P, Cavailles V. Tamoxifen resistance and epigenetic modifications in breast cancer cell lines. *Curr Med Chem.* 2007;14:3035–45.
48. Gutierrez MC, Detre S, Johnston S, Mohsin SK, Shou J, Allred DC, et al. Molecular changes in tamoxifen-resistant breast cancer: relationship between estrogen receptor, HER-2, and p38 mitogen-activated protein kinase. *J Clin Oncol.* 2005;23:2469–76.
49. Barone I, Brusco L, Fuqua SAW. Estrogen receptor mutations and changes in downstream gene expression and signaling. *Clin Cancer Res.* 2010;16:OF1–7.
50. Fuqua SA, Gu G, Rechoum Y. Estrogen receptor (ER) α mutations in breast cancer: hidden in plain sight. *Breast Cancer Res Treat.* 2014;144(1):11–9.
51. Abdel-Hafiz HA. Epigenetic mechanisms of tamoxifen resistance in luminal breast cancer. *Diseases.* 2017;5:16.
52. Arpino G, Wiechmann L, Osborne CK and Schiff R. Crosstalk between the estrogen receptor and the HER tyrosine kinase receptor family: Molecular mechanism and clinical implications for endocrine therapy resistance. *Endocr Rev.* 2008;29:217–33.
53. Musgrove EA, Sutherland RL. Biological determinants of endocrine resistance in breast cancer. *Nat Rev Cancer.* 2009;9:631–43.
54. Droog M, Beelen K, Linn S, Zwart W. Tamoxifen resistance: from bench to bedside. *Eur J Pharmacol.* 2013;717:47–57.
55. Higgins MJ, Stearns V. Understanding resistance to tamoxifen in hormone receptor-positive breast cancer. *Clin Chem.* 2009;55:1453–

55.

56. Choi C.-H. ABC transporters as multidrug resistance mechanisms and the development of chemosensitizers for their reversal. *Cancer Cell*.2005;5:30.
57. Hoffmann EK, Lambert IH. Ion channels and transporters in the development of drug resistance in cancer cells. *Philos Trans R Soc Lond B Biol Sci*.2014;369:20130109.
58. Gu W, Dong N, Wang P, Shi C, Yang J, Wang J. Tamoxifen resistance and metastasis of human breast cancer cells were mediated by the membrane-associated estrogen receptor ER- α 36 signaling in vitro. *Cell Biol Toxicol*.2017;33:183–95.
59. Yang SX, Polley E, Lipkowitz S. New insights on PI3K/AKT pathway alterations and clinical outcomes in breast cancer. *Cancer Treat Rev*.2016;45:87–96.
60. Légaré S, Basik M. The link between ERAcorepressors and histone deacetylases in tamoxifen resistance in breast cancer. *Mol Endocrinol*.2016;30:965–76.
61. Cochrane DR, Cittelly DM, Howe EN, Spoelstra NS, McKinsey EL, LaPara K, et al. MicroRNAs link estrogen receptor alpha status and Dicer levels in breast cancer. *Hormones Cancer*.2010;1:306–19.
62. Yan B, Guo Q, Fu FJ, Wang Z, Yin Z, Wei YB, et al. The role of miR-29b in cancer: regulation, function, and signaling. *Onco Targets Ther*.2015;8:539–48.
63. Muluhngwi P, Krishna A, Vittitow SL, Napier JT, Richardson KM, Ellis M, et al. Tamoxifen differentially regulates miR-29b-1 and miR- 29a expression depending on endocrine-sensitivity in breast cancer cells. *Cancer Lett*. 2017 Mar 1;388:230-238.
64. Pathiraja TN, Stearns V, Oesterreich S. Epigenetic regulation in estrogen receptor positive breast cancer – role in treatment response. *J Mammary Gland Biol Nepolasia*.2010;15:35–47.
65. Iorio MV, Croce CM. microRNA involvement in human cancer. *Carcinogenesis*.2012;33:1126–33.
66. Kozomara A, Griffiths-Jones S. miRBase: annotating high confidence microRNAs using deep sequencing data. *Nucleic Acids Res*.2014;42:D68–D73.

67. Huntzinger E, Izaurralde E. Gene silencing by microRNAs: contributions of translational repression and mRNA decay. *Nat Rev Genet.* 2011;12:99–110.
68. Hummel R, Hussey DJ, Haier J. MicroRNAs: predictors and modifiers of chemo-and radiotherapy in different tumour types. *Eur J Cancer.* 2010;46:298–311.
69. Volinia S, Calin GA, Liu C-G, Ambs S, Cimmino A, Petrocca F, et al. A microRNA expression signature of human solid tumors defines cancer gene targets. *Proc Natl Acad Sci USA* 2006;103:2257–61.
70. Di Martino MT, Gullà A, Cantafio ME, Lionetti M, Leone E, Amodio N, et al. In vitro and in vivo anti-tumor activity of miR-221/222 inhibitors in multiple myeloma. *Oncotarget.* 2013;4:242–55.
71. McGuire A, Brown JA, Kerin MJ. Metastatic breast cancer: the potential of miRNA for diagnosis and treatment monitoring. *Cancer Metastasis Rev.* 2015;34:145–55.
72. Goh JN, Loo SY, Datta A, Siveen KS, Yap WN, Cai W, et al. MicroRNAs in breast cancer: regulatory roles governing the hallmarks of cancer. *Biol Rev Camb Philos Soc.* 2016;91:409–28.
73. Bertoli G, Cava C, Castiglioni I. MicroRNAs: new biomarkers for diagnosis, prognosis, therapy prediction and therapeutic tools for breast cancer. *Theranostics.* 2015;5:1122–43.
74. Iorio M, Ferracin M, Liu C, Veronese A, Spizzo R, Sabbioni S, et al. MicroRNA gene expression deregulation in human breast cancer. *Cancer Res.* 2005;65:7065–70.
75. Van Schonneveld E, Wildiers H, Vergote I, Vermeulen PB, Dirix LY, van Laere SJ. Dysregulation of microRNAs in breast cancer and their potential role as prognostic and predictive biomarkers in patient management. *Breast Cancer Res.* 2015;17:21.
76. Li J, Smyth P, Flavin R, et al. Comparison of miRNA expression patterns using total RNA extracted from matched samples of formalin-fixed paraffin embedded (FFPE) cells and snap frozen cells. *BMC Biotechnol.* 2007;29:36.
77. Heneghan HM, Miller N, Lowery AJ, Sweeney KJ, Newell J, Kerin MJ. Circulating microRNAs as novel minimally invasive biomarkers for breast cancer. *Ann Surg.* 2010;251:499–505.

78. Zhang H, Li B, Zhao H, Chang J. The expression and clinical significance of serum miR-205 for breast cancer and its role in detection of human cancers. *Int J Clin Exp Med.* 2015;8:3034–43.
79. Wu Q, Wang C, Lu Z, Guo L, Ge Q. Analysis of serum genome-wide microRNAs for breast cancer detection. *Clin Chim Acta; Int J Clin Chem.* 2012;413:1058–65.
80. Jaiyesimi IA, Buzdar AU, Decker DA, Hortobagyi GN. Use of tamoxifen for breast cancer: twenty-eight years later. *J Clin Oncol.* 1995;13:513–29.
81. Lowery AJ, Miller N, Devaney A, McNeil RE, Davoren PA, Lemetre C, et al. MicroRNA signatures predict oestrogen receptor, progesterone receptor and HER2/neu receptor status in breast cancer. *Breast Cancer Res.* 2009;11:R27.
82. Muluhngwi P, Klinge CM. Identification of miRNA as biomarkers for acquired endocrine resistance in breast cancer. *Mol Cell Endocrinol.* 2017;456:76–86.
83. Egeland NG, Lunde S, Jonsdottir K, Lende TH, Cronin-Fenton D, Gilje B, et al. The role of microRNAs as predictors of response to tamoxifen treatment in breast cancer patients. *Int J Mol Sci.* 2015;16:24243–75.
84. Di Leva G, Gasparini P, Piovan C, Ngankeu A, Garofalo M, Taccioli C, et al. MicroRNA cluster 221-222 and estrogen receptor alpha interaction in breast cancer. *J Natl Cancer Inst.* 2010;102:706–21.
85. He YJ, Wu JZ, Ji MH, Ma T, Qiao EQ, Ma R, et al. miR-342 is associated with estrogen receptor-alpha expression and response to tamoxifen in breast cancer. *Exp Ther Med.* 2013;5:813–8.
86. Cui J, Bi M, Overstreet AM, Yang Y, Li H, Leng Y, et al. MiR-873 regulates ERα transcriptional activity and tamoxifen resistance via targeting CDK3 in breast cancer cells. *Oncogene.* 2015;34:4018.
87. Zhao Y, Deng C, Lu W, Xiao J, Ma D, Guo M, et al. let-7 microRNAs induce tamoxifen sensitivity by down-regulation of estrogen receptor α signaling in breast cancer. *Mol Med.* 2011;17:1233–41.
88. Shi L, Dong B, Li Z, Lu Y, Ouyang T, Li J, et al. Expression of ER-α 36, a novel variant of estrogen receptor {alpha}, and resistance to tamoxifen treatment in breast cancer. *J Clin Oncol.* 2009;27:3423–9.

89. Li G, Zhang J, Jin K, He K, Zheng Y, Xu X, et al. Estrogen receptor-alpha36 is involved in development of acquired tamoxifen resistance via regulating the growth status switch in breast cancer cells. *Mol Oncol*. 2013;7:611–24.
90. Zhao Y, Deng C, Lu W, Xiao J, Ma D, Guo M, et al. Let-7 microRNAs induce tamoxifen sensitivity by down-regulation of estrogen receptor signaling in breast cancer. *Mol Med*. 2011;17:1233–41.
91. Chistiakov DA, Sobenin IA, Orekhov AN, Bobryshev YV. Human miR-221/222 in physiological and atherosclerotic vascular remodeling. *Biomed Res Int*. 2015;2015:3545-17
92. Brognara E, Fabbri E, Aimi F, Manicardi A, Bianchi N, Finotti A, et al. Peptide nucleic acids targeting miR-221 modulate p27Kip1 expression in breast cancer MDA-MB-231 cells. *Int J Oncol*. 2012;41:2119–27.
93. Dentelli P, Traversa M, Rosso A, Tigliatto G, Olgasi C, Marchio C, et al. miR-221/222 control luminal breast cancer tumor progression by regulating different targets. *Cell Cycle*. 2014;13:1811–26.
94. Foley NH, Bray I, Watters KM, Das S, Bryan K, Bernas T, et al. 2011. MicroRNAs 10a and 10b are potent inducers of neuroblastoma cell differentiation through targeting of nuclear receptor corepressor 2. *Cell death Differ*. 2011;18:1089–98.
95. Maggiolini M, Picard D. The unfolding stories of GPR30, a new membrane-bound estrogen receptor. *Journal of Endocrinology* 2010; 204: 105-14
96. Ignatov A, Ignatov T, Roessner A, Costa SD, Kalinski T. Role of GPR30 in the mechanisms of tamoxifen resistance in breast cancer MCF-7 cells. *Breast Cancer Res Treat* 2010; 123: 87-96.

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Target	Sample	Group	Relative Quantity	Relative Quantity(g)	Relative Quantity SD	Corrected Relative Quantity SEM	Relative Quant SEM	Relative Quant(g)	Relative Quant 95% □ Low	Relative Quant 95% □ High	Uncalibrated Expression	Uncalibrated Expression SD	Corrected Uncalibrated Expression SD	SD Uncalibrated Expression(g)	Uncalibrated Expression SEM	Corrected Uncalibrated Expression SEM	SEM Uncalibrated Expression(g)	Expression	Expresson SD	Corrected Expression SD	SD Expression(g)	Expression SEM	Corrected Expression SEM	SEM Expression(g)	Expression 95% □ Low	Expression 95% □ High	Wt %	Mean Cq	Cq SEM	P-Value
RN2000	Ng-PS			0.076321285	-3.717170727	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	24.815831	0	NaN	
RN2000	Ng-SP	A1		0.463576885	-1.125346708	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	22.221105	0	NaN
RN2000	Ng-VB	A2		0.073805127	-3.750313013	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	2	24.867014	0	NaN
RN2000	Ng-PA	A2		0.820224131	-0.285939467	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	21.303037	0	NaN
RN2000	Ng-YA	G2		0.052381292	-4.002272708	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	25.111700	0	NaN
RN2000	Ng-YT	G2		3	0	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	3	21.100001	0	NaN	
RN2000	Ng-YAH	A2		0.118852205	-3.072750925	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	24.180012	0	NaN
RN2000	Ng-YI'	G2		0.538613625	-0.303176151	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	22.011637	0	NaN
RN2000	Ng-YAI	A2		0.030823715	-6.529600405	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	27.637721	0	NaN
RN2000	Ng-YC	A1		0.2507611221	-1.2925613813	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	23.103078	0	NaN
RN2000	Ng-YM	A2		0.228133052	-2.1253021543	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	21.202039	0	NaN
RN2000	Ng-YK	A2		0.423048133	-1.234640187	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	23.342701	0	NaN
RN2000	Ng-YL	A2		0.1377059103	-2.858623402	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	23.966604	0	NaN
RN2000	Ng-YB	A1		0.329747774	-2.327747844	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	23.011639	0	NaN
RN2000	Ng-YT1	A2		0.528605779	-0.929613303	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	22.027676	0	NaN
RN2000	Ng-YW	A2		0.5381181343	-0.94866409	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	22.056703	0	NaN
RN2000	Ng-YX	G2		0.0800325434	-4.48961157	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	24.507606	0	NaN
RN2000	Ng-YA			0.804034729	-0.154562413	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	23.622623	0	NaN
RN2000	Ng-YP	G1		0.039001738	-6.793580354	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	27.003061	0	NaN
RN2000	Ng-YX	G2		0.528025484	-0.02884204	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	22.011639	0	NaN
RN2000	Ng-YG	G2		0.1020369513	-3.284377845	0	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	24.392030	0	NaN
RN2000	Ng-YW	G1		0.793950460	-0.018764111	n	n	n	n	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	1	21.921305	0	NaN

miRNA22	Ng_Ps		0	0	0	0	NaN	0	NaN	NaN					
1	Ng_3P	A1		0.245950993	-2.076207221	0	0	0	0	NaN	3	18.0791271	0	0	NaN
1	Ng_3P	A2		0.405725255	-1.265771187	0	0	0	0	NaN	3	17.207201	0	0	NaN
1	Ng_7A	A2		0	0	0	0	NaN	0	NaN	0	0	NaN		
1	Ng_7A	C1		3	0	0	0	0	0	NaN	3	14.041500	0	0	NaN
1	Ng_7A	C2		0.038738426	-3.38137624	0	0	0	0	NaN	3	19.381182	0	0	NaN
1	Ng_7A	A2		0.375098821	-2.542804187	0	0	0	0	NaN	3	18.590111	0	0	NaN
1	Ng_1J	C2		0.357052526	-2.67058095	0	0	0	0	NaN	3	18.712107	0	0	NaN
1	Ng_1J	A2		0.3070320844	-3.221300734	0	0	0	0	NaN	3	19.264707	0	0	NaN
1	Ng_1J	A1		0.357951503	-2.662706143	0	0	0	0	NaN	3	18.706272	0	0	NaN
1	Ng_1J	A2		0.385281473	-1.376015188	0	0	0	0	NaN	3	17.417532	0	0	NaN
1	Ng_1J	A2		0.322327686	-3.031277727	0	0	0	0	NaN	3	19.072698	0	0	NaN
1	Ng_1J	A2		0.528057389	-0.921233439	0	0	0	0	NaN	3	18.592776	0	0	NaN
1	Ng_1M	A1		0.451202946	-1.901125767	0	0	0	0	NaN	3	17.542663	0	0	NaN
1	Ng_1K	A2		0.370520458	-1.432411837	0	0	0	0	NaN	3	17.47932	0	0	NaN
1	Ng_1M	A2		0	0	0	0	NaN	0	NaN	0	0	NaN		
1	Ng_1M	B2		0.338120157	-1.264366477	0	0	0	0	NaN	3	17.007573	0	0	NaN
1	Ng_1O		0	0	0	0	NaN	0	NaN	0	0	NaN			
1	Ng_1M	B1		0.317613172	-3.08787377	0	0	0	0	NaN	3	19.120376	0	0	NaN
1	Ng_1K	B2		0.089359848	-1.547023307	0	0	0	0	NaN	3	19.259823	0	0	NaN
1	Ng_1S	B2		0	0	0	0	NaN	0	NaN	0	0	NaN		
1	Ng_1M	C2		0	0	0	0	NaN	0	NaN	0	0	NaN		

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Target	Sample	Relative Quantity	Relative Quantity(g)	Relative Quantity SD	Corrected Relative Quantity SD	SD RQ(g)	SEM RQ(g)	Relative Quantity 95% CI Low	Relative Quantity 95% CI High	Unscaled Expression	Unscaled Expression SD	Corrected Unscaled Expression	SD Unscaled Expression(g)	Uncalcd Expression SEM	Corrected Uncalcd Expression SEM	SEM Unscaled Expression(g)	Expression	Expression SD	Corrected Expression	SD Expression(g)	Expression SEM	Corrected Expression SEM	SEM Expression(g)	Exposure 95% CI Low	Exposure 95% CI High	Wells	Mean Cq	Cq SEM	P-Value	
miRNA22	Sample 23	-	0.870373	0.635	0	0	NaN	0	0	2.688	1.403	0	0	0	0	0.688	1.405	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 24	-	4.950267	3.229	0	0	NaN	0	0	71.92	6.200	0	0	0	0	73.929	6.208	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 25	-	3.816177	0.614	0	0	NaN	0	0	101.1	6.692	0	0	0	0	101.10	6.695	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 26	-	1.791664	0.537	0	0	NaN	0	0	11.75	3.554	0	0	0	0	11.79	3.554	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 27	-	0.030035559	0.773	0	0	NaN	0	0	7.278	2.863	0	0	0	0	7.2787	2.863	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 28	-	D	0	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	
miRNA22	Sample 29	-	3.6121518	0.328	0	0	NaN	0	0	0.350	1.524	0	0	0	0	0.3500	1.514	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 30	-	2.721834	2.118	0	0	NaN	0	0	15.14	3.920	0	0	0	0	15.147	3.920	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 31	-	0.151291538	4.484	0	0	NaN	0	0	0.153	2.703	0	0	0	0	0.1535	2.703	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 32	-	7.005434	0.5981313	0	0	NaN	0	0	0.013	0.5897	1	0	0	0	0.0136	0.589	1	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 33	-	0.503683179	0.751218	0	0	NaN	0	0	5.771	2.520	0	0	0	0	5.7729	2.511	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 34	-	0.073218033	4.134	0	0	NaN	0	0	0.201	1.8312	0	0	0	0	0.2001	1.811	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 35	-	1.9077999	3.442	0	0	NaN	0	0	2.227	1.3552	0	0	0	0	2.2272	1.355	0	0	0	0	0	0	0	0	0	0	0	0	0
miRNA22	Sample 36	-	3.0051854	0.367	0	0	NaN	0	0	1.491	0.5771	0	0	0	0	1.4918	0.577	0	0	0	0	0	0	0	0	0	0	0	0	0

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miRNA22	Sample	37	1	0	D	0	NaN	0	0	NaN	NaN	NaN	81.31	0.3455	0	0	D	NaN	0	0	NaN	81.328	0.3455	0	0	0	NaN	0	0	NaN	NaN	NaN	NaN	26	30	78	1	8	0	0	NaN	
miRNA22	Sample	38	-	0.194526	0.194526	0	D	0	NaN	0	0	NaN	NaN	0.993	0.0103	0	0	D	NaN	0	0	NaN	0.9930	0.0103	0	0	0	NaN	0	0	NaN	NaN	NaN	NaN	38	50	64	2	0	0	0	NaN
miRNA22	Sample	39	-	0.011616346	0.011616346	0	D	0	NaN	0	0	NaN	NaN	0.01	2	0	0	D	NaN	0	0	NaN	10375	1188	0	0	0	NaN	0	0	NaN	NaN	NaN	NaN	38	50	64	2	0	0	0	NaN
miRNA22	Sample	40	-	0.0264632109	0.0264632109	0	D	0	NaN	0	0	NaN	NaN	0.0266	5.2306	9	0	D	NaN	0	0	NaN	0.0266	5.2306	8825	0	0	NaN	0	0	NaN	NaN	NaN	NaN	38	53	85	7	2	0	0	NaN
miRNA22	Sample	41	-	0.073134187	0.073134187	0	D	0	NaN	0	0	NaN	NaN	0.0056	1.0002	0	0	D	NaN	0	0	NaN	0.0056	1.0002	213	0	0	NaN	0	0	NaN	NaN	NaN	NaN	38	58	61	9	2	0	0	NaN
miRNA22	Sample	42	-	0.000403384	0.000403384	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	50	54	7	2	0	0	NaN
miRNA22	Sample	43	-	11.27555	11.27555	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	50	54	7	2	0	0	NaN
miRNA22	Sample	44	-	11.15824	11.15824	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	58	61	5	2	0	0	NaN
miRNA22	Sample	45	-	10.47711	10.47711	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	57	70	3	2	0	0	NaN	
miRNA22	Sample	46	-	0.024406518	0.024406518	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	57	73	9	2	0	0	NaN	
miRNA22	Sample	47	-	7.542748	7.542748	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	58	61	5	2	0	0	NaN	
miRNA22	Sample	48	-	0.002314734	0.002314734	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	58	61	4	2	0	0	NaN	
miRNA22	Sample	49	-	0.233552285	0.233552285	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	52	62	9	2	0	0	NaN	
miRNA22	Sample	50	-	0.010007025	0.010007025	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	53	67	2	0	0	0	NaN	
miRNA22	Sample	51	-	0.0514000638	0.0514000638	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	53	67	1	2	0	0	NaN	
miRNA22	Sample	52	-	0.4279652	0.4279652	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	53	67	1	2	0	0	NaN	
miRNA22	Sample	53	-	0.5680124507	0.5680124507	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	54	66	3	2	0	0	NaN	
miRNA22	Sample	54	-	0.3102856124	0.3102856124	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	50	62	2	2	0	0	NaN	
miRNA22	Sample	55	-	1.940590	1.940590	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	50	62	1	2	0	0	NaN	
miRNA22	Sample	56	-	0.1196364079	0.1196364079	0	D	0	NaN	0	0	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	38	52	64	8	2	0	0	NaN	

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| RM4GB_36 | Sampel | | - | 3.582093 | 0.088447172 | 0 | 0 | NaN | |
|----------|--------|--|---|----------|-------------|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| RM4GB_37 | Sampel | | - | 0.345500 | 0.032207347 | 0 | 0 | NaN | |
| RM4GB_38 | Sampel | | - | 0.188337 | 0.033732180 | 0 | 0 | NaN | |
| RM4GB_39 | Sampel | | 1 | 0 | 0 | 0 | 0 | NaN | |
| RM4GB_40 | Sampel | | - | 2.479357 | 0.180200000 | 0 | 0 | NaN | |

