MDR-Inhibitor

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Chemical	Dosage	References
(+)-CEPHARANTHINE	IC50=2.06 uM	*
(+)-CEPHARANTHINE	1 ug/mL	Hotta,T., Tanimura,H., Yamaue,H., Iwahashi,M., Tani,M., Tsunoda,T., Tamami,M., Moguchi,K., Mizobata,S., Arii,K., Teraswa,H. 1997. Modulation of Multidrug Resistance by Cepharanthine in Fresh Human Gastrointestinal Tumor Cells. Oncology, 54(2): 153-157.
10-DEACETYLBACCATIN-III	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
11-METHOXY-KOPSILONGINE	IC50=1.6 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
12-METHOXY-PLEIOCARPINE	IC50=21 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
13-ACETYL-BREVIFOLIOL	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
19-ACETYL-19-DEBENZOYLTAXININE-M	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
1BETA-HYDROXYBACCATIN-1	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
2',7-DIDEACETOXYAUSTROSPICATINE	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
2,9-DIDEACETYLTAXININE	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
2-DEACETOXYAUSTROSPICATINE	1 ug/mL	Kobayashi, J., et al. 1994. Taxuspines A-C, New Taxoids From Japanese New Taxus cuspidata Inhibiting Drug Transport Activityof P-Glycoprotein in Multidrug-Resistant Cells. Tetrahedron, 50(25): 7401-7416.
2-DEACETOXYTAXININE-E	10 ug/ml	*
2-DEACETOXYTAXININE-J	1 ug/mL	Kobayashi, J., et al. 1994. Taxuspines A-C, New Taxoids From Japanese New Taxus cuspidata Inhibiting Drug Transport Activityof P-Glycoprotein in Multidrug-Resistant Cells. Tetrahedron, 50(25): 7401-7416.
2-DEACETYL-5-DECINNAMOYLTAXININE-J	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
2-DEACETYLTAXININE-J	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
2-DECINNAMOYLTAXININE-J	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
5'-METHOXYHYDNOCARPIN	--	Stermitz, F. R., Lorenz, P., Tawara, J. N., Zenewicz, L. A., Lewis, K. 2000. Synergy in a medicinal plant: antimicrobial action of berberine potentiated by 5'-methoxyhydnocarpin, a multidrug pump inhibitor. Proc Natl Acad Sci USA, 97(4): 1433-1437.
5-N-ACETYLARDEEMIN	10 uM	Karwowski, J. P., et al. 1993. 5-n-acetylkardeemin, a Novel Heterocyclic Compound Which Reverses Multiple Drug Resistance in Tumor Cells I. Taxonomy and Fermentation of the Producing Organism and Biological Activity. J Antibiot, 46(3): 374-379.
7-EPITAXOL	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
7-O-ACETYLTAXINE-A	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
ARTEMISININ	IC50=2 uM	*
BRAZILIN	50 mg/kg ipr mus	Choi, S. Y., Yang, K. M., Jeon, S. D., Kim, J. H., Khil, L. Y., Chang, T. S., Moon, C. K. 1997. Brazilin Modulates Immune Function Mainly by Augmenting T-Cell Activity in Halothane Administered Mice. Planta Medica, 63: 405-408.
BREVIFOLIOL	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
CELAFOLIN-A1	IC50=0.77 uM	Kim, S. E., Kim, Y. H., Lee, J. J., Kim, Y. C. 1998. A New Sesquiterpene Ester From Celastrus orbiculatus Reversing Multidrug Resistance in Cancer Cells. J. Nat. Prod., 61(1): 108-111.

Chemical	Dosage	References
CELAFOLIN-A1	IC50=1.45 uM	Kim, S. E., Kim, Y. H., Lee, J. J., Kim, Y. C. 1998. A New Sesquiterpene Ester From Celastrus orbiculatus Reversing Multidrug Resistance in Cancer Cells. J. Nat. Prod., 61(1): 108-111.
CELORBICOL-ESTER	IC50=1.36 uM	Kim, S. E., Kim, Y. H., Lee, J. J., Kim, Y. C. 1998. A New Sesquiterpene Ester From Celastrus orbiculatus Reversing Multidrug Resistance in Cancer Cells. J. Nat. Prod., 61(1): 108-111.
CHALCONE	100 uM	Critchfield, J. W., Welsh, C. J., Phang, J. M., Yeh, G. C. 1994. Modulation of Adriamycin Accumulation and Efflux by Flavonoids in HCT-15 Colon Cells. Activation of P-Glycoprotein as a Putative Mechanism. Biochem Pharmacol, 48(7): 1437-1445.
CINCHONINE	5 uM	*
CINCHONINE	250 mg/kg igs rat	Genne, P., Duchamp, O., Solary, E., Magnette, J., Belon, J. P., Chauffert, B. 1995. Cinchonine Per OS: Efficient Circumvention of P-Glycoprotein-Mediated Multidrug Resistance. Anticancer Drug Design, 10(2): 103-118.
COLCHICEINE	ED50=15 ng/ml	Tang-Wai, D. F., Brossi, A., Arnold, L. D., Gros, P. 1993. The Nitrogen of the Acetamido Group of Colchicine Modulates P-Glycoprotein-Mediated Multidrug Resistance. Biochemistry, 32(25): 6470-6476.
COLCHICIDE	ED50=410 ng/ml	Tang-Wai, D. F., Brossi, A., Arnold, L. D., Gros, P. 1993. The Nitrogen of the Acetamido Group of Colchicine Modulates P-Glycoprotein-Mediated Multidrug Resistance. Biochemistry, 32(25): 6470-6476.
CONODURAMINE	IC50=0.6 ug/ml	You, M., et al. 1994. Indole Alkaloids From Peschiera laeta That Enhance Vinblastine-Mediated Cytotoxicity With Multidrug-Resistant Cells. J. Nat. Prod., 57(11): 1517-1522.
CONOPHYLLINE-QUINONE	--	Takahashi, K., Koyano, T., Komiyama, H., Kam, T. S. 1998. Conophylline Quinone as a New Antitumor Agent. Patent, Japan Kokai Tokkyo Koho-10 45,763. 5pp.
CORONARIDINE	IC50=1.9 ug/ml	You, M., et al. 1994. Indole Alkaloids From Peschiera laeta That Enhance Vinblastine-Mediated Cytotoxicity With Multidrug-Resistant Cells. J. Nat. Prod., 57(11): 1517-1522.
CURCUMIN	1-55 uM	*
DEACETYL-COLCHICEINE	ED50=27 ng/ml	Tang-Wai, D. F., Brossi, A., Arnold, L. D., Gros, P. 1993. The Nitrogen of the Acetamido Group of Colchicine Modulates P-Glycoprotein-Mediated Multidrug Resistance. Biochemistry, 32(25): 6470-6476.
DECINNAMOYL-TAXAGIFINE	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
DEMECOLCINE	ED50=78 ng/ml	Tang-Wai, D. F., Brossi, A., Arnold, L. D., Gros, P. 1993. The Nitrogen of the Acetamido Group of Colchicine Modulates P-Glycoprotein-Mediated Multidrug Resistance. Biochemistry, 32(25): 6470-6476.
DENDROAMIDE-A	5 uM	Ogino, J., Moore, R. E., Patterson, G. M. L., Smith, C. D. 1996. Dendroamides, New Cyclic Hexapeptides From a Blue-Green Alga. Multidrug-Resistance Reversing Activity of Dendroamide A. J. Nat. Prod., 59(6): 581-586.
DIACETYLTAXININE-B	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
DIOSMIN	100 uM	Critchfield, J. W., Welsh, C. J., Phang, J. M., Yeh, G. C. 1994. Modulation of Adriamycin Accumulation and Efflux by Flavonoids in HCT-15 Colon Cells. Activation of P-Glycoprotein as a Putative Mechanism. Biochem Pharmacol, 48(7): 1437-1445.
GENISTEIN	200 uM	Castro, A. F., Altenberg, G. A. 1997. Inhibition of Drug Transport by Genistein in Multidrug-Resistant Cell Expressing P-Glycoprotein. Biochem Pharmacol, 53(1): 89-93.
GINSENOSIDE-RB-1	100 uM cat	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RB-2	100 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RC	100 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RD	50 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RE	100 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RF	100 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.

Chemical	Dosage	References
GINSENOSIDE-RF-1	100 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RF-2	25 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RG-1	100 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
GINSENOSIDE-RG-2	100 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.
HAPALOSIN	20 uM	Stratmann, K., Burgoyne, D. L., Moore, R. E., Patterson, G. M. L., Smith, C. D. 1994. Hapalosin, a Cyanobacterial Cyclic Depsipeptide With Multidrug-Resistance Reversing Activity. J Org Chem, 59(24): 7219-7226.
HOMOHARRINGTONINE	--	Qian, Q. J., Han, J. L., Yan, W. W., Yang, C. Z., Han, D. S., Shi, H., Hao, Y. 1996. A Comparative Study on the Mechanism of Homoharringtonine (HHI) and Melphalan (MEL) Resistance in K562/H20 and K562/MEL Cell Lines. Zhonghua Xueyexue Zazhi,17(7):354-356.
INOSTAMYCIN	10 uM	*
ISORESERPINE	1.6 uM	Hall, A. M., Croy, V., Chan, T., Ruff, D., Kuczek, T., Chang, C. J. 1996. Bicinchoninic Acid Protein Assay in the Determination of Adriamycin Cytotoxicity Modulated by the MDR Glycoprotein. J Nat Prod, 59(1): 35-40.
KOPSAMINE	IC50=5.6 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
KOPSIFLORINE	IC50=5.6 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
KOPSILONGINE	IC50=15.4 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
KOPSININE	IC50=25 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
LAHADININE-A	IC50=2.5 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
LYCACONITINE	IC50=74 ug/ml	Kim, D. K., Kwon, H. Y., Lee, K. R., Rhee, D. K., Zee, O. P. 1998. Isolation of a Multidrug Resistance Inhibitor From Aconitum pseudo-laeve var. erectum. Arch Pharm Research, 21: 344-347.
PLEIOCARPINE	IC50=3.1 ug/ml	Kam, T. S., Subramaniam, G., Sim, K. M., Yoganathan, K., Koyano, T., Toyoshima, M., Rho, M. C., Hayashi, M., Komiyama, K. 1998. Reversal of Multidrug Resistance (MDR) by Aspidofractinine-Type Indole Alkaloids. Bioorg. Med. Chem. Lett., 8: 2769-2772.
PUERARIN	--	*
QUINIDINE	100 uM	Critchfield, J. W., Welsh, C. J., Phang, J. M., Yeh, G. C. 1994. Modulation of Adriamycin Accumulation and Efflux by Flavonoids in HCT-15 Colon Cells. Activation of P-Glycoprotein as a Putative Mechanism. Biochem Pharmacol, 48(7): 1437-1445.
QUINIDINE	IC50=1-12 uM	*
QUININE	IC50=4-17 uM	*
RESERPINE	2.5-10 uM	*
TANGERETIN	--	*
TAXACIN	10 ug/ml	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXACUSTIN	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXAGIFINE	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.

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Chemical	Dosage	References
TAXAYUNTIN	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXCHININ-B	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXINE-II	1 ug/mL	*
TAXININE	1 ug/mL	*
TAXININE-A	1 ug/mL	*
TAXININE-B	1-10 ug/ml	*
TAXININE-M	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-A	1 ug/mL	*
TAXUSPINE-B	1 ug/mL	*
TAXUSPINE-C	1 ug/mL	*
TAXUSPINE-D	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-F	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-G	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-H	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-J	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-K	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-L	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-M	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-O	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-P	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-Q	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-R	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-S	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
TAXUSPINE-T	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
THALICARPINE	2 uM	*
TOLYPORPHIN	--	Smith, C. D., Prinsep, M. R., Caplan, F. R., Moore, R. E., Patterson, G. M. L. 1994. Reversal of Multiple Drug Resistance by Tolyporphin, a Novel Cyanobacterial Natural Product. Oncol. Res., 6: 211-218.
TOLYPORPHIN-A	0.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1995. Further Tolyporphins From the Blu-Green Alga Tolypothrix nodosa. Tetrahedron, 51(38): 10523-10530.
TOLYPORPHIN-B	0.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1995. Further Tolyporphins From the Blu-Green Alga Tolypothrix nodosa. Tetrahedron, 51(38): 10523-10530.
TOLYPORPHIN-C	0.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1995. Further Tolyporphins From the Blu-Green Alga Tolypothrix nodosa. Tetrahedron, 51(38): 10523-10530.
TOLYPORPHIN-D	0.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1995. Further Tolyporphins From the Blu-Green Alga Tolypothrix nodosa. Tetrahedron, 51(38): 10523-10530.

Chemical	Dosage	References
TOLYPORPHIN-F	0.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1995. Further Tolyporphins From the Blu-Green Alga Tolypothrix nodosa. Tetrahedron, 51(38): 10523-10530.
TOLYPORPHIN-G	0.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1995. Further Tolyporphins From the Blu-Green Alga Tolypothrix nodosa. Tetrahedron, 51(38): 10523-10530.
TOLYPORPHIN-H	0.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1995. Further Tolyporphins From the Blu-Green Alga Tolypothrix nodosa. Tetrahedron, 51(38): 10523-10530.
TOLYPORPHIN-J	2.5 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1998. Tolyporphins J and K, Two Further Porphinoid Metabolites From the Cyanobacterium Tolypothrix nodosa. J. Nat. Prod., 61(9): 1133-1136.
TOLYPORPHIN-K	2.5-10 ug/ml	Prinsep, M. R., Patterson, G. M. L., Larsen, L. K., Smith, C. D. 1998. Tolyporphins J and K, Two Further Porphinoid Metabolites From the Cyanobacterium Tolypothrix nodosa. J. Nat. Prod., 61(9): 1133-1136.
TORILIN	10-30 uM	*
TRIACETYLTAXICIN-I	1 ug/mL	Kobayashi, J., et al. 1997. Effects of Taxoids From Taxus cuspidata on Microtubule Depolymerization and Vincristine Accumulation in MDR Cells. Bioorg. Med. Chem. Lett., 7: 393-398.
VINCALEUKOBLASTINE	100 uM	Critchfield, J. W., Welsh, C. J., Phang, J. M., Yeh, G. C. 1994. Modulation of Adriamycin Accumulation and Efflux by Flavonoids in HCT-15 Colon Cells. Activation of P-Glycoprotein as a Putative Mechanism. Biochem Pharmacol, 48(7): 1437-1445.
VOACAMINE	IC50=2 ug/ml	You, M., et al. 1994. Indole Alkaloids From Peschiera laeta That Enhance Vinblastine-Mediated Cytotoxicity With Multidrug-Resistant Cells. J. Nat. Prod., 57(11): 1517-1522.
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ZINGIBEROSIDE-R1	25 uM	Hasegawa,H.,Sung,J.H.,Matsumiya,S.,Uchiyama,M.,Inouye,Y.,Kasai,R.,Yamasaki,K. 1995. Reversal of Daunomycin and Vinblastine Resistance in Multidrug-Resistance P388 Leukemia in vitro through Enhanced Cytotoxicity by Triterpenoids. Planta Med, 61(5):409-413.

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