

S21 Table: Mitoxantrone significantly affects the expression of the selected 163 genes as evident in the “LINCS L1000 Chem Pert down” category in Enrichr. The last number after the - is dose density.

Term	Overlap	P-value	Adjusted P-value
LINCS L1000 Chem Pert down			
LJP005 HCC515 24H-mitoxantrone-0.12	17/120	$1.22 \times 10^{-16}$	$2.02 \times 10^{-13}$
LJP007 HT29 24H-mitoxantrone-10	15/123	$7.94 \times 10^{-14}$	$3.13 \times 10^{-11}$
LJP005 HEPG2 24H-mitoxantrone-10	13/82	$1.18 \times 10^{-13}$	$4.40 \times 10^{-11}$
LJP005 SKBR3 24H-mitoxantrone-10	12/70	$4.03 \times 10^{-13}$	$1.24 \times 10^{-10}$
LJP005 BT20 3H-mitoxantrone-3.33	10/40	$6.72 \times 10^{-13}$	$1.89 \times 10^{-10}$
LJP008 PC3 24H-mitoxantrone-10	15/146	$1.02 \times 10^{-12}$	$2.69 \times 10^{-10}$
LJP006 SKBR3 24H-mitoxantrone-3.33	14/120	$1.03 \times 10^{-12}$	$2.68 \times 10^{-10}$
LJP005 A549 24H-mitoxantrone-3.33	16/185	$2.53 \times 10^{-12}$	$5.42 \times 10^{-10}$
LJP006 HCC515 24H-mitoxantrone-0.12	11/82	$6.38 \times 10^{-11}$	$7.36 \times 10^{-9}$
LJP006 HEPG2 24H-mitoxantrone-10	11/87	$1.23 \times 10^{-10}$	$1.24 \times 10^{-8}$
LJP005 SKBR3 24H-mitoxantrone-3.33	12/115	$1.71 \times 10^{-10}$	$1.63 \times 10^{-8}$
LJP006 HCC515 24H-mitoxantrone-0.37	11/92	$2.28 \times 10^{-10}$	$2.08 \times 10^{-8}$
LJP005 SKBR3 3H-mitoxantrone-10	9/52	$3.46 \times 10^{-10}$	$2.94 \times 10^{-8}$
LJP005 HA1E 24H-mitoxantrone-10	11/98	$4.56 \times 10^{-10}$	$3.66 \times 10^{-8}$
LJP006 BT20 24H-mitoxantrone-10	10/75	$5.15 \times 10^{-10}$	$4.03 \times 10^{-8}$
LJP007 A549 24H-mitoxantrone-10	7/25	$8.91 \times 10^{-10}$	$6.36 \times 10^{-8}$
LJP007 HCC515 24H-mitoxantrone-10	10/82	$1.27 \times 10^{-9}$	$8.48 \times 10^{-8}$
LJP005 HT29 24H-mitoxantrone-10	11/110	$1.60 \times 10^{-9}$	$1.03 \times 10^{-7}$
LJP005 HCC515 24H-mitoxantrone-10	11/111	$1.76 \times 10^{-9}$	$1.11 \times 10^{-7}$
LJP006 HS578T 24H-mitoxantrone-10	10/86	$2.04 \times 10^{-9}$	$1.27 \times 10^{-7}$
LJP005 PC3 24H-mitoxantrone-10	11/114	$2.34 \times 10^{-9}$	$1.43 \times 10^{-7}$
LJP006 HS578T 24H-mitoxantrone-3.33	11/115	$2.57 \times 10^{-9}$	$1.54 \times 10^{-7}$
LJP009 A375 24H-mitoxantrone-10	10/93	$4.43 \times 10^{-9}$	$2.44 \times 10^{-7}$
LJP006 HCC515 24H-mitoxantrone-10	10/94	$4.92 \times 10^{-9}$	$2.65 \times 10^{-7}$
LJP006 HS578T 3H-mitoxantrone-1.11	9/74	$8.93 \times 10^{-9}$	$4.42 \times 10^{-7}$
LJP009 HCC515 24H-mitoxantrone-10	9/75	$1.01 \times 10^{-8}$	$4.87 \times 10^{-7}$
LJP009 HT29 24H-mitoxantrone-10	10/104	$1.32 \times 10^{-8}$	$6.08 \times 10^{-7}$
LJP008 HCC515 24H-mitoxantrone-10	9/78	$1.43 \times 10^{-8}$	$6.50 \times 10^{-7}$
LJP009 HEPG2 24H-mitoxantrone-10	10/108	$1.91 \times 10^{-8}$	$8.23 \times 10^{-7}$
LJP006 MCF10A 3H-mitoxantrone-10	9/81	$2.01 \times 10^{-8}$	$8.50 \times 10^{-7}$
LJP006 MCF7 24H-mitoxantrone-10	8/61	$3.34 \times 10^{-8}$	$1.31 \times 10^{-6}$
LJP005 HS578T 24H-mitoxantrone-0.37	11/152	$4.83 \times 10^{-8}$	$1.82 \times 10^{-6}$
LJP008 HEPG2 24H-mitoxantrone-10	9/90	$5.11 \times 10^{-8}$	$1.91 \times 10^{-6}$
LJP006 HS578T 24H-mitoxantrone-0.37	10/122	$6.17 \times 10^{-8}$	$2.24 \times 10^{-6}$
LJP008 A549 24H-mitoxantrone-10	9/93	$6.81 \times 10^{-8}$	$2.42 \times 10^{-6}$
LJP005 HS578T 3H-mitoxantrone-3.33	9/93	$6.81 \times 10^{-8}$	$2.42 \times 10^{-6}$
LJP005 HCC515 24H-mitoxantrone-3.33	9/96	$8.99 \times 10^{-8}$	$3.05 \times 10^{-6}$
LJP005 BT20 24H-mitoxantrone-10	9/101	$1.40 \times 10^{-7}$	$4.48 \times 10^{-6}$
LJP005 HCC515 24H-mitoxantrone-1.11	9/101	$1.40 \times 10^{-7}$	$4.47 \times 10^{-6}$
LJP006 A375 24H-mitoxantrone-10	10/134	$1.50 \times 10^{-7}$	$4.75 \times 10^{-6}$
LJP005 HS578T 3H-mitoxantrone-1.11	9/102	$1.52 \times 10^{-7}$	$4.81 \times 10^{-6}$
LJP005 MCF7 24H-mitoxantrone-10	7/50	$1.56 \times 10^{-7}$	$4.92 \times 10^{-6}$
LJP008 HA1E 24H-mitoxantrone-10	9/103	$1.66 \times 10^{-7}$	$5.19 \times 10^{-6}$
LJP006 SKBR3 24H-mitoxantrone-10	8/78	$2.37 \times 10^{-7}$	$6.96 \times 10^{-6}$
LJP006 LNCAP 3H-mitoxantrone-3.33	7/54	$2.69 \times 10^{-7}$	$7.74 \times 10^{-6}$
LJP005 HA1E 24H-mitoxantrone-0.37	9/109	$2.70 \times 10^{-7}$	$7.75 \times 10^{-6}$
LJP005 A549 24H-mitoxantrone-10	10/143	$2.76 \times 10^{-7}$	$7.88 \times 10^{-6}$
LJP006 HT29 24H-mitoxantrone-10	8/80	$2.89 \times 10^{-7}$	$8.18 \times 10^{-6}$
LJP006 PC3 24H-mitoxantrone-10	9/110	$2.92 \times 10^{-7}$	$8.24 \times 10^{-6}$
LJP005 BT20 3H-mitoxantrone-1.11	7/55	$3.07 \times 10^{-7}$	$8.58 \times 10^{-6}$
LJP006 HA1E 24H-mitoxantrone-1.11	9/113	$3.68 \times 10^{-7}$	$9.95 \times 10^{-6}$
LJP005 HS578T 24H-mitoxantrone-0.12	8/85	$4.63 \times 10^{-7}$	$1.21 \times 10^{-5}$
LJP006 HS578T 3H-mitoxantrone-3.33	8/92	$8.53 \times 10^{-7}$	$2.02 \times 10^{-5}$
LJP005 MCF10A 3H-mitoxantrone-1.11	7/65	$9.82 \times 10^{-7}$	$2.28 \times 10^{-5}$

S21 Table: (Continued)

LJP006 LNCAP 24H-mitoxantrone-1.11	11/207	$1.09 \times 10^{-6}$	$2.49 \times 10^{-5}$
LJP006 LNCAP 24H-mitoxantrone-10	8/95	$1.09 \times 10^{-6}$	$2.50 \times 10^{-5}$
LJP006 SKBR3 3H-mitoxantrone-10	7/70	$1.63 \times 10^{-6}$	$3.50 \times 10^{-5}$
LJP006 HME1 24H-mitoxantrone-0.37	6/46	$1.91 \times 10^{-6}$	$3.97 \times 10^{-5}$
LJP005 MDAMB231 3H-mitoxantrone-3.33	7/72	$1.98 \times 10^{-6}$	$4.10 \times 10^{-5}$
LJP006 MCF10A 3H-mitoxantrone-0.12	6/48	$2.47 \times 10^{-6}$	$4.92 \times 10^{-5}$
LJP005 HA1E 24H-mitoxantrone-0.12	7/77	$3.13 \times 10^{-6}$	$6.01 \times 10^{-5}$
LJP006 HCC515 24H-mitoxantrone-3.33	6/51	$3.55 \times 10^{-6}$	$6.66 \times 10^{-5}$
LJP006 MCF7 3H-mitoxantrone-10	6/52	$3.99 \times 10^{-6}$	$7.40 \times 10^{-5}$
LJP006 PC3 24H-mitoxantrone-3.33	9/152	$4.41 \times 10^{-6}$	$8.06 \times 10^{-5}$
LJP009 MCF7 24H-mitoxantrone-10	8/117	$5.26 \times 10^{-6}$	$9.40 \times 10^{-5}$
LJP005 HA1E 24H-mitoxantrone-3.33	7/86	$6.57 \times 10^{-6}$	$1.13 \times 10^{-4}$
LJP005 A375 24H-mitoxantrone-10	8/121	$6.76 \times 10^{-6}$	$1.16 \times 10^{-4}$
LJP008 MCF7 24H-mitoxantrone-10	6/57	$6.88 \times 10^{-6}$	$1.18 \times 10^{-4}$
LJP009 PC3 24H-mitoxantrone-10	9/163	$7.79 \times 10^{-6}$	$1.30 \times 10^{-4}$
LJP006 MDAMB231 24H-mitoxantrone-3.33	8/124	$8.10 \times 10^{-6}$	$1.35 \times 10^{-4}$
LJP007 A375 24H-mitoxantrone-10	7/89	$8.26 \times 10^{-6}$	$1.37 \times 10^{-4}$
LJP006 A375 24H-mitoxantrone-3.33	6/59	$8.42 \times 10^{-6}$	$1.40 \times 10^{-4}$
LJP005 HT29 24H-mitoxantrone-0.37	6/60	$9.30 \times 10^{-6}$	$1.52 \times 10^{-4}$
LJP006 MDAMB231 3H-mitoxantrone-3.33	8/127	$9.66 \times 10^{-6}$	$1.57 \times 10^{-4}$
LJP005 HS578T 24H-mitoxantrone-1.11	7/92	$1.03 \times 10^{-5}$	$1.66 \times 10^{-4}$
LJP006 HME1 24H-mitoxantrone-1.11	6/62	$1.13 \times 10^{-5}$	$1.79 \times 10^{-4}$
LJP005 HEPG2 24H-mitoxantrone-3.33	8/132	$1.28 \times 10^{-5}$	$2.00 \times 10^{-4}$
LJP006 HA1E 24H-mitoxantrone-0.12	8/133	$1.35 \times 10^{-5}$	$2.11 \times 10^{-4}$
LJP006 BT20 24H-mitoxantrone-0.12	6/64	$1.36 \times 10^{-5}$	$2.11 \times 10^{-4}$
LJP005 MCF10A 3H-mitoxantrone-10	6/65	$1.48 \times 10^{-5}$	$2.27 \times 10^{-4}$
LJP005 HT29 24H-mitoxantrone-1.11	7/98	$1.56 \times 10^{-5}$	$2.36 \times 10^{-4}$
LJP006 HA1E 24H-mitoxantrone-10	5/40	$1.77 \times 10^{-5}$	$2.63 \times 10^{-4}$
LJP006 MCF7 3H-mitoxantrone-1.11	5/40	$1.77 \times 10^{-5}$	$2.63 \times 10^{-4}$
LJP005 A549 24H-mitoxantrone-1.11	9/183	$1.97 \times 10^{-5}$	$2.88 \times 10^{-4}$
LJP006 MCF10A 24H-mitoxantrone-0.12	7/103	$2.16 \times 10^{-5}$	$3.12 \times 10^{-4}$
LJP005 MDAMB231 3H-mitoxantrone-1.11	6/72	$2.68 \times 10^{-5}$	$3.77 \times 10^{-4}$
LJP006 MDAMB231 3H-mitoxantrone-1.11	6/73	$2.90 \times 10^{-5}$	$4.01 \times 10^{-4}$
LJP005 MDAMB231 3H-mitoxantrone-10	6/75	$3.38 \times 10^{-5}$	$4.59 \times 10^{-4}$
LJP005 SKBR3 24H-mitoxantrone-1.11	6/77	$3.93 \times 10^{-5}$	$5.20 \times 10^{-4}$
LJP006 MDAMB231 3H-mitoxantrone-10	7/114	$4.16 \times 10^{-5}$	$5.43 \times 10^{-4}$
LJP006 HEPG2 24H-mitoxantrone-3.33	7/117	$4.91 \times 10^{-5}$	$6.23 \times 10^{-4}$
LJP006 BT20 24H-mitoxantrone-1.11	6/81	$5.24 \times 10^{-5}$	$6.61 \times 10^{-4}$
LJP006 MCF10A 3H-mitoxantrone-3.33	6/82	$5.61 \times 10^{-5}$	$6.99 \times 10^{-4}$
LJP006 HS578T 24H-mitoxantrone-1.11	6/84	$6.43 \times 10^{-5}$	$7.85 \times 10^{-4}$
LJP005 HCC515 24H-mitoxantrone-0.37	6/85	$6.87 \times 10^{-5}$	$8.30 \times 10^{-4}$
LJP006 A549 24H-mitoxantrone-3.33	8/167	$6.93 \times 10^{-5}$	$8.34 \times 10^{-4}$
LJP007 HA1E 24H-mitoxantrone-10	6/87	$7.83 \times 10^{-5}$	$9.17 \times 10^{-4}$
LJP005 HA1E 24H-mitoxantrone-0.04	5/55	$8.46 \times 10^{-5}$	$9.85 \times 10^{-4}$
LJP005 HS578T 3H-mitoxantrone-10	5/55	$8.46 \times 10^{-5}$	$9.84 \times 10^{-4}$
LJP006 LNCAP 3H-mitoxantrone-10	5/57	$1.01 \times 10^{-4}$	$1.13 \times 10^{-3}$
LJP005 A375 24H-mitoxantrone-3.33	6/92	$1.07 \times 10^{-4}$	$1.19 \times 10^{-3}$
LJP006 MDAMB231 24H-mitoxantrone-10	4/31	$1.13 \times 10^{-4}$	$1.24 \times 10^{-3}$
LJP005 MCF7 3H-mitoxantrone-10	6/93	$1.13 \times 10^{-4}$	$1.25 \times 10^{-3}$
LJP006 MDAMB231 24H-mitoxantrone-0.37	5/59	$1.19 \times 10^{-4}$	$1.30 \times 10^{-3}$
LJP005 PC3 24H-mitoxantrone-1.11	6/94	$1.20 \times 10^{-4}$	$1.32 \times 10^{-3}$
LJP006 A549 24H-mitoxantrone-10	6/94	$1.20 \times 10^{-4}$	$1.31 \times 10^{-3}$
LJP005 HS578T 24H-mitoxantrone-3.33	6/96	$1.35 \times 10^{-4}$	$1.46 \times 10^{-3}$
LJP005 BT20 3H-mitoxantrone-10	5/61	$1.39 \times 10^{-4}$	$1.49 \times 10^{-3}$
LJP006 HME1 24H-mitoxantrone-10	5/61	$1.39 \times 10^{-4}$	$1.49 \times 10^{-3}$
LJP006 HA1E 24H-mitoxantrone-3.33	6/97	$1.43 \times 10^{-4}$	$1.53 \times 10^{-3}$
LJP006 HME1 24H-mitoxantrone-3.33	5/63	$1.62 \times 10^{-4}$	$1.70 \times 10^{-3}$

S21 Table: (Continued)

LJP006 MCF10A 3H-mitoxantrone-1.11	5/63	$1.62 \times 10^{-4}$	$1.70 \times 10^{-3}$
LJP007 HEPG2 24H-mitoxantrone-10	5/64	$1.75 \times 10^{-4}$	$1.80 \times 10^{-3}$
LJP006 LNCAP 24H-mitoxantrone-3.33	6/101	$1.79 \times 10^{-4}$	$1.84 \times 10^{-3}$
LJP006 LNCAP 24H-mitoxantrone-0.37	8/195	$2.03 \times 10^{-4}$	$2.04 \times 10^{-3}$
LJP005 MDAMB231 3H-mitoxantrone-0.04	4/37	$2.28 \times 10^{-4}$	$2.27 \times 10^{-3}$
LJP006 HT29 24H-mitoxantrone-3.33	7/150	$2.33 \times 10^{-4}$	$2.31 \times 10^{-3}$
LJP005 MCF10A 3H-mitoxantrone-3.33	4/38	$2.53 \times 10^{-4}$	$2.48 \times 10^{-3}$
LJP006 HEPG2 24H-mitoxantrone-1.11	6/108	$2.58 \times 10^{-4}$	$2.51 \times 10^{-3}$
LJP006 HS578T 3H-mitoxantrone-10	5/71	$2.85 \times 10^{-4}$	$2.73 \times 10^{-3}$
LJP005 MDAMB231 24H-mitoxantrone-10	3/17	$3.32 \times 10^{-4}$	$3.11 \times 10^{-3}$
LJP005 PC3 24H-mitoxantrone-0.12	4/41	$3.40 \times 10^{-4}$	$3.17 \times 10^{-3}$
LJP005 PC3 24H-mitoxantrone-3.33	6/116	$3.79 \times 10^{-4}$	$3.45 \times 10^{-3}$
LJP007 MCF7 24H-mitoxantrone-10	6/120	$4.54 \times 10^{-4}$	$4.02 \times 10^{-3}$
LJP006 MCF7 24H-mitoxantrone-1.11	6/121	$4.75 \times 10^{-4}$	$4.18 \times 10^{-3}$
LJP006 HME1 3H-mitoxantrone-3.33	5/81	$5.26 \times 10^{-4}$	$4.57 \times 10^{-3}$
LJP005 HA1E 24H-mitoxantrone-1.11	5/82	$5.56 \times 10^{-4}$	$4.78 \times 10^{-3}$
LJP005 HT29 24H-mitoxantrone-3.33	7/177	$6.32 \times 10^{-4}$	$5.30 \times 10^{-3}$
LJP006 A549 24H-mitoxantrone-1.11	6/130	$6.93 \times 10^{-4}$	$5.73 \times 10^{-3}$
LJP006 MCF7 3H-mitoxantrone-3.33	4/50	$7.31 \times 10^{-4}$	$5.98 \times 10^{-3}$
LJP008 HT29 24H-mitoxantrone-10	4/55	$1.05 \times 10^{-3}$	$8.16 \times 10^{-3}$
LJP006 HS578T 24H-mitoxantrone-0.12	4/56	$1.12 \times 10^{-3}$	$8.61 \times 10^{-3}$
LJP005 MDAMB231 24H-mitoxantrone-3.33	3/28	$1.50 \times 10^{-3}$	$1.10 \times 10^{-2}$
LJP006 SKBR3 3H-mitoxantrone-3.33	4/61	$1.55 \times 10^{-3}$	$1.12 \times 10^{-2}$
LJP008 A375 24H-mitoxantrone-10	5/103	$1.56 \times 10^{-3}$	$1.13 \times 10^{-2}$
LJP005 MCF10A 24H-mitoxantrone-0.04	4/62	$1.64 \times 10^{-3}$	$1.18 \times 10^{-2}$
LJP005 BT20 24H-mitoxantrone-3.33	4/64	$1.85 \times 10^{-3}$	$1.30 \times 10^{-2}$
LJP006 HME1 3H-mitoxantrone-10	4/64	$1.85 \times 10^{-3}$	$1.30 \times 10^{-2}$
LJP006 PC3 24H-mitoxantrone-0.37	4/64	$1.85 \times 10^{-3}$	$1.30 \times 10^{-2}$
LJP006 MDAMB231 24H-mitoxantrone-0.12	3/31	$2.02 \times 10^{-3}$	$1.40 \times 10^{-2}$
LJP005 MCF7 3H-mitoxantrone-1.11	4/66	$2.07 \times 10^{-3}$	$1.43 \times 10^{-2}$
LJP006 HA1E 24H-mitoxantrone-0.37	5/111	$2.16 \times 10^{-3}$	$1.49 \times 10^{-2}$
LJP006 BT20 24H-mitoxantrone-0.37	4/69	$2.44 \times 10^{-3}$	$1.63 \times 10^{-2}$
LJP005 SKBR3 24H-mitoxantrone-0.37	4/72	$2.84 \times 10^{-3}$	$1.86 \times 10^{-2}$
LJP005 HS578T 3H-mitoxantrone-0.37	3/36	$3.11 \times 10^{-3}$	$2.01 \times 10^{-2}$
LJP006 HEPG2 24H-mitoxantrone-0.37	5/125	$3.62 \times 10^{-3}$	$2.27 \times 10^{-2}$
LJP006 A549 24H-mitoxantrone-0.12	5/129	$4.14 \times 10^{-3}$	$2.52 \times 10^{-2}$
LJP006 MCF7 24H-mitoxantrone-3.33	4/81	$4.35 \times 10^{-3}$	$2.61 \times 10^{-2}$
CPC020 HT29 6H-mitoxantrone dihydrochloride-10.0	6/190	$4.71 \times 10^{-3}$	$2.80 \times 10^{-2}$
LJP005 A375 24H-mitoxantrone-1.11	4/83	$4.74 \times 10^{-3}$	$2.81 \times 10^{-2}$
LJP006 HME1 3H-mitoxantrone-1.11	3/43	$5.16 \times 10^{-3}$	$2.99 \times 10^{-2}$
LJP006 HT29 24H-mitoxantrone-0.37	3/43	$5.16 \times 10^{-3}$	$2.99 \times 10^{-2}$
LJP006 BT20 24H-mitoxantrone-3.33	4/86	$5.38 \times 10^{-3}$	$3.10 \times 10^{-2}$
LJP006 LNCAP 3H-mitoxantrone-1.11	3/46	$6.24 \times 10^{-3}$	$3.47 \times 10^{-2}$
LJP006 HCC515 24H-mitoxantrone-1.11	4/91	$6.56 \times 10^{-3}$	$3.62 \times 10^{-2}$
LJP006 MDAMB231 3H-mitoxantrone-0.37	3/47	$6.63 \times 10^{-3}$	$3.64 \times 10^{-2}$
LJP006 SKBR3 3H-mitoxantrone-1.11	3/47	$6.63 \times 10^{-3}$	$3.64 \times 10^{-2}$
CPC020 PC3 6H-mitoxantrone dihydrochloride-10.0	6/205	$6.77 \times 10^{-3}$	$3.71 \times 10^{-2}$
LJP005 BT20 24H-mitoxantrone-1.11	3/48	$7.03 \times 10^{-3}$	$3.84 \times 10^{-2}$
LJP009 A549 24H-mitoxantrone-10	3/48	$7.03 \times 10^{-3}$	$3.83 \times 10^{-2}$
LJP005 SKBR3 3H-mitoxantrone-3.33	3/48	$7.03 \times 10^{-3}$	$3.83 \times 10^{-2}$
LJP006 SKBR3 24H-mitoxantrone-1.11	4/94	$7.35 \times 10^{-3}$	$3.97 \times 10^{-2}$
LJP005 SKBR3 24H-mitoxantrone-0.04	3/49	$7.44 \times 10^{-3}$	$4.00 \times 10^{-2}$
LJP005 MCF10A 24H-mitoxantrone-1.11	5/149	$7.55 \times 10^{-3}$	$4.04 \times 10^{-2}$
LJP007 PC3 24H-mitoxantrone-10	4/97	$8.19 \times 10^{-3}$	$4.33 \times 10^{-2}$