

Supplement 3. Probe sets for genes related to ubiquinases in serotonin neurons. All probe sets changed 2-fold or greater with E or E+P treatment compared to placebo treatment of OvX macaques.

Search	Mean Signal Intensity			Gene Identifier	Other ID	Gene Name
UBE	OvX	E	E+P			
	67.5	1514.35	762.3	Z29331	MmugDNA.29016.1.S1_at	gDNA.Hs.28505.0.S3 FEA=U133PSR GEN=UBE2H DEF=Orthologous to 222420_s_at ubiquitin-conjugating enzyme E2H (UBC8 homolog, yeast)
	23.6	245	158.55	AW662789	MmugDNA.42377.1.S1_at	gDNA.Hs.294136.0.A1 FEA=U133PSR GEN=UBE2D3 DEF=Orthologous to 230171_at Ubiquitin-conjugating enzyme E2D 3 (UBC4 5 homolog, yeast)
	334.6	2958.05	1416.5	NM_003340	MmugDNA.7415.1.S1_s_at	gDNA.g4507776 FEA=U133PSR GEN=UBE2D3 DEF=Orthologous to 200669_s_at ubiquitin-conjugating enzyme E2D 3 (UBC4 5 homolog, yeast)
	143.35	1311.25	402.75	BC004862	MmugDNA.38344.1.S1_at	gDNA.g13436070 FEA=U133PSR GEN=UBE2R2 DEF=Orthologous to 223014_at ubiquitin-conjugating enzyme E2R 2
	310.7	1797.8	1156.1	BC003395	MmugDNA.6893.1.S1_at	gDNA.g13097281 FEA=U133PSR GEN=UBE2D3 DEF=Orthologous to 200668_s_at ubiquitin-conjugating enzyme E2D 3 (UBC4 5 homolog, yeast)
	77.35	311.7	391.6	AA160522	MmugDNA.41426.1.S1_s_at	gDNA.Hs.301667.0.A1 FEA=U133PSR GEN=UBE3A DEF=Orthologous to 213291_s_at ubiquitin protein ligase E3A (human papilloma virus E6-associated protein, Angelman syndrome)
	131.3	612.65	353.85	U62136	MmugDNA.12795.1.S1_at	gDNA.g4775663 FEA=U133PSR GEN=UBE2V2 DEF=Orthologous to 209096_at ubiquitin-conjugating enzyme E2 variant 2
	1089.6	4720.55	3063.75	BF448062	MmugDNA.179.1.S1_at	gDNA.Hs.118797.0.A3 FEA=U133PSR GEN=UBE2D3 DEF=Orthologous to 200667_at ubiquitin-conjugating enzyme E2D 3 (UBC4 5 homolog, yeast)
	173.35	584.2	401.05	BC002775	MmugDNA.24283.1.S1_at	gDNA.g12803862 FEA=U133PSR GEN=UBE2G1 DEF=Orthologous to 209142_s_at ubiquitin-conjugating enzyme E2G 1 (UBC7 homolog, C. elegans)
	535.35	1770.9	1001.55	NM_004788	MmugDNA.7059.1.S1_at	gDNA.g4759287 FEA=U133PSR GEN=UBE4A DEF=Orthologous to 202038_at ubiquitination factor E4A (UFD2 homolog, yeast)
	383.6	1309.25	666.8	NM_017582	MmugDNA.32489.1.S1_at	gDNA.g8923743 FEA=U133PSR GEN=UBE2Q DEF=Orthologous to 217978_s_at ubiquitin-conjugating enzyme E2Q (putative)
	83	204.35	221.85	AL562528	MmugDNA.16180.1.S1_at	gDNA.Hs.184325.0.A3 FEA=U133PSR GEN=UBE2J1 DEF=Orthologous to 217823_s_at ubiquitin-conjugating enzyme E2, J1 (UBC6 homolog, yeast)
	697.6	2434.1	1112.9	BG531983	MmugDNA.35625.1.S1_s_at	gDNA.Hs.108104.0.S1 FEA=U133PSR GEN=UBE2L3 DEF=Orthologous to 200682_s_at ubiquitin-conjugating enzyme E2L 3
	355.15	1140.3	660	-	MmuSTS.4733.1.S1_at	gi:60301518 DEF=UBE1C_8886 Rhesus macaque genomic DNA Macaca mulatta STS genomic clone MMA8886, sequence tagged site
	73.45	148.85	211	AW516242	MmugDNA.17692.1.S1_s_at	gDNA.Hs.170737.0.A1 FEA=U133PSR GEN=UBE1DC1 DEF=Orthologous to 222578_s_at ubiquitin-activating enzyme E1-domain containing 1
	278.95	474.6	861.9	A1499236	MmugDNA.2447.1.S1_at	gDNA.Hs.811.1.A1 FEA=U133PSR GEN=UBE2B DEF=Orthologous to 228588_s_at ubiquitin-conjugating enzyme E2B (RAD6 homolog)
	79.15	191.9	184.5	BF679700	MmugDNA.35416.1.S1_at	gDNA.Hs.270366.0.A1 FEA=U133PSR GEN=UBE2D3 DEF=Orthologous to 243046_at Ubiquitin-conjugating enzyme E2D 3 (UBC4 5 homolog, yeast)
	817.15	2207.5	1620.4	AA877765	MmugDNA.21931.1.S1_at	gDNA.Hs.811.0.A1 FEA=U133PSR GEN=UBE2B DEF=Orthologous to 202333_s_at ubiquitin-conjugating enzyme E2B (RAD6 homolog)
	486.95	1371.15	834.05	-	MmuSTS.2001.1.S1_at	gi:47155553 DEF=UBE2A_72 Rhesus macaque genomic DNA Macaca mulatta STS genomic clone MMA72, sequence tagged site. GEN=UBE2A PROD=ubiquitin-conjugating enzyme E2A
	676.85	1820.45	1215.65	AB017644	MmugDNA.40739.1.S1_at	gDNA.g4586929 FEA=U133PSR GEN=UBE2E3 DEF=Orthologous to 210024_s_at ubiquitin-conjugating enzyme E2E 3 (UBC4 5 homolog, yeast)
	334.95	1110.35	375	-	MmuSTS.974.1.S1_at	gi:53828483 DEF=UBE2L3_3884 Rhesus macaque genomic DNA Macaca mulatta STS genomic clone MMA3884, sequence tagged site. GEN=UBE2L3 PROD=ubiquitin-conjugating enzyme E2L 3
	664.6	1733.3	1177.55	AL518159	MmugDNA.30183.1.S1_at	gDNA.Hs.7766.0.A2 FEA=U133PSR GEN=UBE2E1 DEF=Orthologous to 212519_at ubiquitin-conjugating enzyme E2E 1 (UBC4 5 homolog, yeast)
	622.8	1974.85	740.95	NM_003334	MmugDNA.7386.1.S1_at	gDNA.g4507762 FEA=U133PSR GEN=UBE1 DEF=Orthologous to 200964_at ubiquitin-activating enzyme E1 (A1S9T and BN75 temperature sensitivity complementing)
	553.3	1393.25	999.35	BG290646	MmugDNA.9787.1.S1_s_at	gDNA.Hs.75355.1.A1 FEA=U133PSR GEN=UBE2N DEF=Orthologous to 212751_at ubiquitin-conjugating enzyme E2N (UBC13 homolog, yeast)
	274.5	649.6	535.85	AW299555	MmugDNA.37118.1.S1_at	gDNA.Hs.78563.0.A3 FEA=U133PSR GEN=UBE2G1 DEF=Orthologous to 209141_at ubiquitin-conjugating enzyme E2G 1 (UBC7 homolog, C. elegans)
	615.5	1484.85	1124.8	-	MmuSTS.4687.1.S1_at	gi:47777228 DEF=UBE2D2_1119 Rhesus macaque genomic DNA Macaca mulatta STS genomic clone MMA1119, sequence tagged site. GEN=UBE2D2 PROD=ubiquitin-conjugating enzyme E2D 2
	139.55	368.55	205.6	BE221883	MmugDNA.41419.1.S1_at	gDNA.Hs.66817.0.A1 FEA=U133PSR GEN=UBE2R2 DEF=Orthologous to 226954_at Ubiquitin-conjugating enzyme E2R 2
	249.8	697.9	302.35	NM_003922	MmugDNA.15633.1.S1_at	gDNA.g4557025 FEA=U133PSR GEN=HERC1 DEF=Orthologous to 218306_s_at hect (homologous to the E6-AP (UBE3A) carboxyl terminus) domain and RCC1 (CHC1)-like domain (RLD) 1
	61.75	73.75	169.25	NM_016021	MmugDNA.15202.1.S1_at	gDNA.g7706311 FEA=U133PSR GEN=UBE2J1 DEF=Orthologous to 217826_s_at ubiquitin-conjugating enzyme E2, J1 (UBC6 homolog, yeast)
	170.6	352.95	301.65	BE783065	MmugDNA.11900.1.S1_at	gDNA.Hs.22543.0.S1 FEA=U133PSR GEN=UBE3A DEF=Orthologous to 226587_at Ubiquitin protein ligase E3A (human papilloma virus E6-associated protein, Angelman syndrome)
	458.95	1243.95	468.8	BF435617	MmugDNA.29018.1.S1_at	gDNA.Hs.28505.0.S4 FEA=U133PSR GEN=UBE2H DEF=Orthologous to 222421_at ubiquitin-conjugating enzyme E2H (UBC8 homolog, yeast)
	413.75	999.9	539.7	NM_006048	MmugDNA.36546.1.S1_at	gDNA.g5174482 FEA=U133PSR GEN=UBE4B DEF=Orthologous to 202317_s_at ubiquitination factor E4B (UFD2 homolog, yeast)
	148.3	354.8	181.75	BE964689	MmugDNA.35627.1.S1_at	gDNA.Hs.108104.0.S2 FEA=U133PSR GEN=UBE2L3 DEF=Orthologous to 200683_s_at ubiquitin-conjugating enzyme E2L 3
	581.55	1218.4	776.8	-	MmuSTS.2901.1.S1_at	gi:51854190 DEF=UBE2L_3883 Rhesus macaque genomic DNA Macaca mulatta STS genomic clone MMA3883, sequence tagged site. GEN=UBE2L PROD=ubiquitin-conjugating enzyme E2L
	719.5	1546.15	918.6	BE621259	MmugDNA.4956.1.S1_at	gDNA.Hs.108332.0.S2 FEA=U133PSR GEN=UBE2D2 DEF=Orthologous to 201343_at ubiquitin-conjugating enzyme E2D 2 (UBC4 5 homolog, yeast)
	997.45	2294.05	1090.25	U39381	MmugDNA.7908.1.S1_at	gDNA.g1066081 FEA=U133PSR GEN=UBE2V1 Kua-UEV DEF=Orthologous to 201002_s_at ubiquitin-conjugating enzyme E2 variant 1
	269.45	569.35	283.75	NM_004223	MmugDNA.7052.1.S1_at	gDNA.g4759281 FEA=U133PSR GEN=UBE2L6 DEF=Orthologous to 201649_at ubiquitin-conjugating enzyme E2L 6
	121.4	357.35	73.25	A1459177	MmugDNA.35956.1.S1_at	gDNA.Hs.172759.0.A1 FEA=U133PSR GEN=UBE2D3 DEF=Orthologous to 242403_at Ubiquitin-conjugating enzyme E2D 3 (UBC4 5 homolog, yeast)
	282.95	572	260.7	AC005600	MmugDNA.573.1.S1_at	gDNA.Hs.90303.2.S1 FEA=U133PSR GEN=TSC2 DEF=Orthologous to 215735_s_at tuberous sclerosis 2
	167.05	170.3	82.7	NM_014501	MmugDNA.15298.1.S1_at	gDNA.g7657045 FEA=U133PSR GEN=UBE2S DEF=Orthologous to 202779_s_at ubiquitin-conjugating enzyme E2S
	258.6	190.25	121.15	A1800998	MmugDNA.18540.1.S1_at	gDNA.Hs.43569.0.A1 FEA=U133PSR GEN=UBE2V2 DEF=Orthologous to 230411_at Ubiquitin-conjugating enzyme E2 variant 2
	241	50.15	313.8	AA250831	MmugDNA.18053.1.S1_at	gDNA.Hs.87757.0.A1 FEA=U133PSR GEN=UBE3A DEF=Orthologous to 243855_at Ubiquitin protein ligase E3A (human papilloma virus E6-associated protein, Angelman syndrome)
	209.8	155.3	97.2	AW779859	MmugDNA.22609.1.S1_at	gDNA.Hs.284233.0.S2 FEA=U133PSR GEN=UBE2Q DEF=Orthologous to 222480_at ubiquitin-conjugating enzyme E2Q (putative)
	464.65	372.1	192.5	BC035653	MmugDNA.37414.1.S1_s_at	gDNA.Hs2.406136.1.A1 FEA=U133PSR GEN=UBE2G2 DEF=Orthologous to 1557053_s_at ubiquitin-conjugating enzyme E2G 2 (UBC7 homolog, yeast)
	540.6	328.95	266.55	AL121873	MmugDNA.9196.1.S1_s_at	gDNA.Hs.283845.0.S1 FEA=U133PSR GEN=UBE2V1 Kua-UEV DEF=Orthologous to 216315_x_at ubiquitin-conjugating enzyme E2 variant 1
	401.5	181.2	188.5	AW364833	MmugDNA.27810.1.S1_at	gDNA.Hs.165681.0.A1 FEA=U133PSR GEN=UBE2B DEF=Orthologous to 239163_at ubiquitin-conjugating enzyme E2B (RAD6 homolog)
	358.15	209.95	68.9	AW500009	MmugDNA.16183.1.S1_at	gDNA.Hs.184325.0.A5 FEA=U133PSR GEN=UBE2J1 DEF=Orthologous to 217824_at ubiquitin-conjugating enzyme E2, J1 (UBC6 homolog, yeast)
	510.65	60.55	330.05	AU146791	MmugDNA.14362.1.S1_at	gDNA.Hs.287474.0.S1 FEA=U133PSR GEN=UBE2E1 DEF=Orthologous to 215577_at Ubiquitin-conjugating enzyme E2E 1 (UBC4 5 homolog, yeast)
	251.95	15.05	236.55	AF258566	MmugDNA.21374.1.S1_at	gDNA.Hs2Afxf.1.256.S1 FEA=U133PSR GEN=UBE1 DEF=Orthologous to 1555387_at ubiquitin-activating enzyme E1 (A1S9T and BN75 temperature sensitivity complementing)