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Header: UBA1_RAT GN=Uba1 , Ubiquitin-like modifier-activating enzyme 1, Ubiquitin-activating enzyme E1 AC=Q5U300 OS=Rattus norvegicus (Rat).

Avg Mass: 117787.8 Coverage: 759/1058 = **71.7%** by amino acid count, 84150.2/117787.8 = **71.4%** by mass

MSSSPLSKKR **RVSGDPKPG** **SNCSSAQSVL** SEVSSVPTNG MAK**NGSEADI** **DESLYSRQLY** **VLGHEAMKML**
QTSSVLVSGL **RGLGVEIAKN** **IILGGVKAVT** **LHDQGTQWA** **DLS**SQFY**LRE** **EDIGKNRAEV** SQPRLAELNS
YVPVTAYTGP LVEDFLSGFQ VVVL**TNSPLE** **EQLR****VGEFCH** **SG**GIKLVVAD TRGLFGQLFC DFGEEM**VLTD**
SNGEQPLSAM **VSMVTK****DNPG** **VVTCLDEARH** **GFETGDFVSF** SEVQGM**VQLN** **GCQPIEIKVL** GPYTF**SICDT**
SNFSDYIRGG **IVSQVKVPPK** **ISFKSLPASL** **AEPDFVMTDF** **AKYSRPAQLH** **IGFQALHQFC** AQHNRPPRPR
NEEDATELVT **LAQAVNARSP** **PAVQODNVDE** **DLIRKLAYVA** **AGDLAPINAF** **IGGLAAQEV** **KACSGKFMPI**
MQWLYFDALE **CLPEDKEALT** **EDKCLPRQNR** **YDGQVAVFGS** **DLQEKLGKQK** **YFLVGAGAIG** **CELLKNFAMI**
GLGCGEGGEV **VVTDMDTIEK** **SNLNR****QFLFR** **PWDVTKLKSD** **TAAAVRQMN** **PYIQVTSHQN** **RVGPDTERIY**
DDDFQNLGD VANALDNVDA RMYMDRRC**VY** **YRKPLLESGT** **LGTKGNVQVV** IPFL**TESYSS** **SQDPPEKSIP**
ICTLKNFPNA **IEHTLOWARD** **EFEGLFKQPA** **ENVNQYLTD**S **KFVERTLRLA** **GTQPLEVLEA** **VQPSLVLQRP**
QWGDCVTWA CHHWHTQYCN NIRQL**LHNFP** **PDQLTSSGAP** **FWSGPKRCPH** **PLTFDVNNTL** **HLDYVMAAN**
LFAQTYGLTG **SQDRAAVASL** **LQSVQVPEFT** **PKSGVKIHVS** **DQELQSANAS** **VDDSRLEELK** **ATLPSPKLP**
GFKMYPIDFE **KDDDSNFHMD** **FIVAASNLRA** **ENYDISPADR** **HKSCLIAGKI** **IPAIATTTAA** **VVGLVCLELY**
KVVGHQQLD **SYKNGFLNLA** **LPFFGFSEPL** **AAPRHQYYNQ** **EWTLWDR****FEV** **QGLQNGEEM** **TLKQFLDYFK**
TEHKLEITML **SQGVSMLYSF** **FMPAAKLKER** **LDQPMTEIVS** **RVSKRKLGRH** **VRALVLELCC** **NDESGEDVEV**
PYVRYTIR

The coverage obtained for the tri enzyme digest of ubiquitin activating enzyme E1 was approximately 71%. The amino acids covered by mass spec are shown in red and the two peptides containing the S-(ethylaminocarbonyl) cysteine adducts are highlighted with green.

Masses of Fragments Produced by DNPGVVTCLDEAR

b	b++				y	y++
116.034	58.521	1	D	13	1445.69 9	723.353
230.077	115.542	2	N	12	1330.67 2	665.840
327.130	164.069	3	P	11	1216.62 9	608.818
384.151	192.579	4	G	10	1119.57 7	560.292
483.220	242.114	5	V	9	1062.55 5	531.781
582.288	291.648	6	V	8	963.487	482.247
683.336	342.172	7	T	7	864.418	432.713
843.397	422.202	8	C	6	763.371	382.189
956.481	478.744	9	L	5	603.310	302.158
1071.50 8	536.258	10	D	4	490.226	245.616
1200.55 0	600.779	11	E	3	375.199	188.103
1271.58 8	636.297	12	A	2	246.156	123.582
1427.68 9	714.348	13	R	1	175.119	88.063

Masses obtained for the non DEDC modified peptide containing the +58Da adduct on Cys234 resulting alkylation with iodoacetamide. This was the only peptide identified in control animal samples.

b	b++				y	y++
116.034	58.521	1	D	13	1459.68 4	730.346
230.077	115.542	2	N	12	1344.65 7	672.832
327.130	164.069	3	P	11	1230.61 4	615.811
384.151	192.579	4	G	10	1133.56 2	567.284
483.220	242.114	5	V	9	1076.54 0	538.774
582.288	291.648	6	V	8	977.472	489.240
683.336	342.172	7	T	7	878.403	439.705
857.382	429.195	8	C	6	777.356	389.181
970.466	485.737	9	L	5	603.310	302.158
1085.49 3	543.250	10	D	4	490.226	245.616
1214.53 5	607.771	11	E	3	375.199	188.103
1285.57 3	643.290	12	A	2	246.156	123.582
1441.67 4	721.340	13	R	1	175.119	88.063

Masses obtained for the DEDC modified peptide demonstrating the presence of the S-(ethylaminocarbony) cysteine adduct (+71Da) on Cys234 identified in samples obtained from exposed animals.

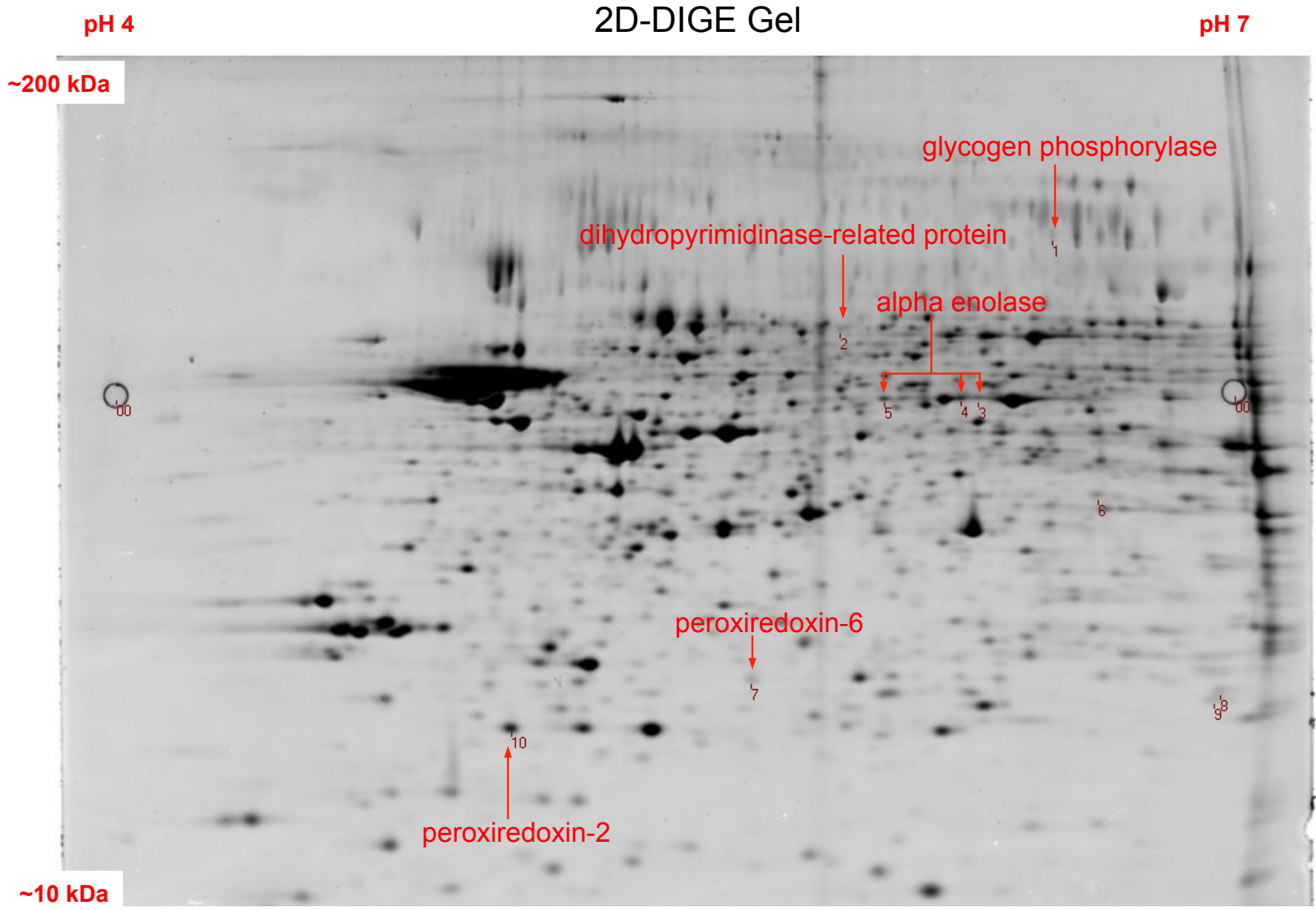
Masses of Fragments Produced by VGEFCHSR

b	b++				y	y++
100.076	50.541	1	V	8	991.472	496.240
157.097	79.052	2	G	7	892.403	446.705
286.140	143.574	3	E	6	835.382	418.195
433.208	217.108	4	F	5	706.339	353.673
593.269	297.138	5	C	4	559.271	280.139
730.328	365.668	6	H	3	399.210	200.109
817.360	409.184	7	S	2	262.151	131.579
973.461	487.234	8	R	1	175.119	88.063

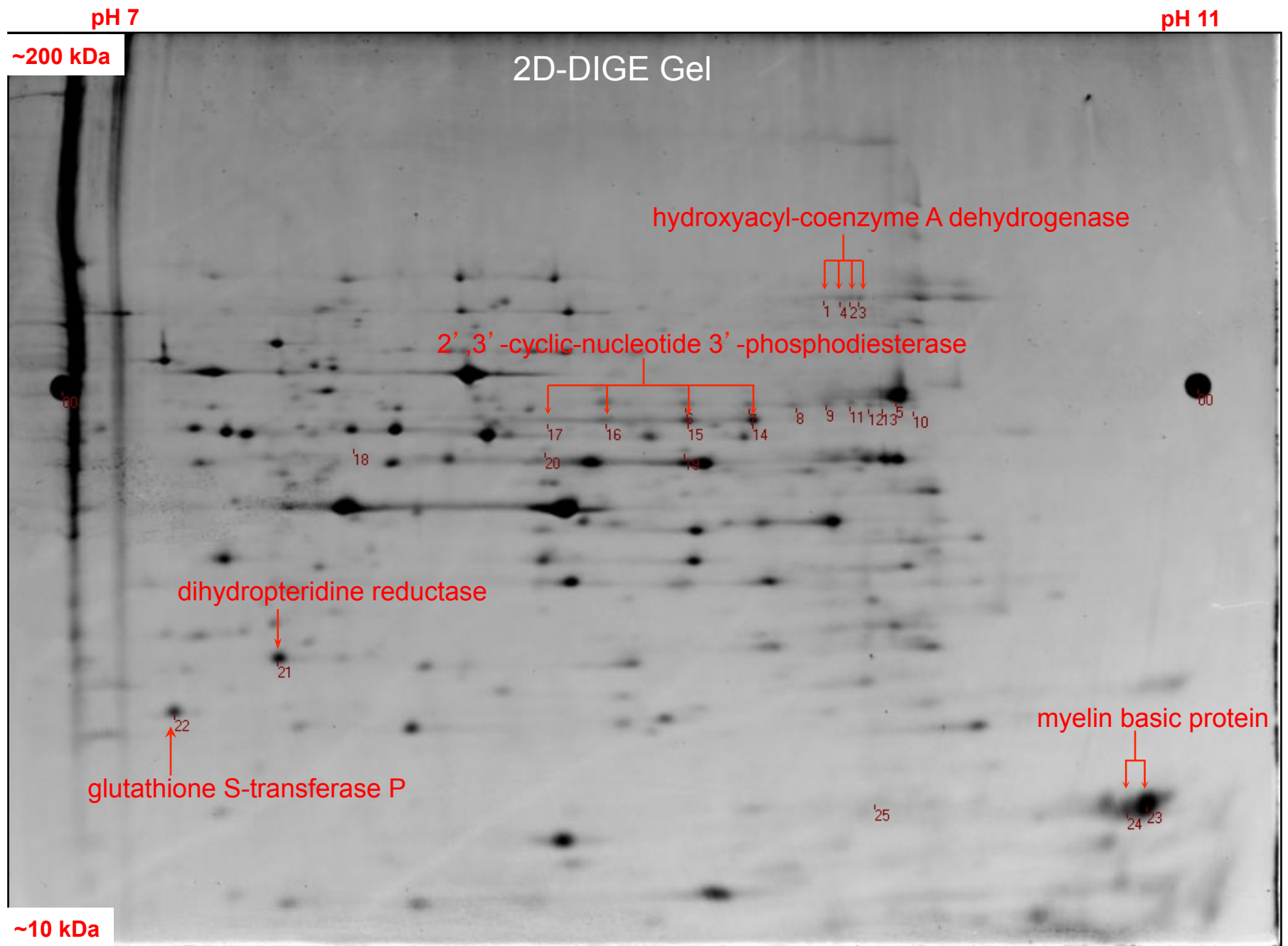
Masses obtained for the non DEDC modified peptide containing the +58Da adduct on Cys179 resulting from alkylation with iodoacetamide. This was the only peptide identified in control animal samples.

b	b++				y	y++
100.076	50.541	1	V	8	1005.45 7	503.232
157.097	79.052	2	G	7	906.388	453.698
286.140	143.574	3	E	6	849.367	425.187
433.208	217.108	4	F	5	720.324	360.666
607.254	304.131	5	C	4	573.256	287.132
744.313	372.660	6	H	3	399.210	200.109
831.345	416.176	7	S	2	262.151	131.579
987.446	494.227	8	R	1	175.119	88.063

Masses obtained for the DEDC modified peptide demonstrating the presence of the S-(ethylaminocarbony) cysteine adduct (+71Da) on Cys179 identified in samples obtained from exposed animals.



2D DIGE gel showing approximate molecular weight and isoelectric points (pH 4-7) of proteins exhibiting altered expression in brains of rats treated with N,N-diethyldithiocarbamate.



2D DIGE gel showing approximate molecular weight and isoelectric points (pH 7-11) of proteins exhibiting altered expression in brains of rats treated with N,N-diethylidithiocarbamate.