

Global Alteration of Gene Expression in Human Keratinocytes by Inorganic Arsenic
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Fig. 3. Cluster analysis of expression patterns as a function of arsenic concentration in SCC12F2. The sequence elements in each of the 7 clusters are given below. The expression data are available by email as an Excel file upon request (rhrice@ucdavis.edu).

Cluster 1

U43916 HSU43916:Human tumor-associated membrane protein homolog (TMP) mRNA
S66896:squamous cell carcinoma antigen=serine protease inhibitor [human, mRNA, 1711 nt]
U19557 HSU19557:Human squamous cell carcinoma antigen 2 (SCCA2) mRNA
M35878 HUMIBP3:Human insulin-like growth factor-binding protein-3 gene
U37518 HSU37518:Human TNF-related apoptosis inducing ligand TRAIL mRNA
U21049:Human DD96 mRNA
J05070:Human type IV collagenase mRNA
AF043498:Homo sapiens prostate stem cell antigen (PSCA) mRNA
U14550:Human sialyltransferase SThM (sthm) mRNA
Y16241:Homo sapiens mRNA for nebulin
AI539439:te51e07.x1 Homo sapiens cDNA, 3' end /clone=IMAGE-2090244
AI885381:w193b01.x1 Homo sapiens cDNA, 3' end /clone=IMAGE-2432425
X77956:H.sapiens Id1 mRNA
X06882:Human gene for CD14 differentiation antigen
M63193:Human platelet-derived endothelial cell growth factor mRNA
X14640:Human mRNA for keratin 13
U13616:Human ankyrin G (ANK-3) mRNA
X16832:Human mRNA for cathepsin H (EC 3.4.22.16)
AB008390:Homo sapiens mRNA for neuropsin type1
U11863:Human clone HP-DAO2 diamine oxidase, copper/topa quinone containing mRNA
M35878:Human insulin-like growth factor-binding protein-3 gene
M91432:Human medium-chain acyl-CoA dehydrogenase (MCAD) gene
M31682:Human testicular inhibin beta-B-subunit mRNA
M92357:Homo sapiens B94 protein mRNA
AL050159:Homo sapiens mRNA; cDNA DKFZp586A0522 (from clone DKFZp586A0522)
J05581:Human polymorphic epithelial mucin (PEM) mRNA
J05581:Human polymorphic epithelial mucin (PEM) mRNA
X79683:H.sapiens LAMB2 mRNA for beta2 laminin
U28249:Human 11kd protein mRNA
M94856:Human fatty acid binding protein homologue (PA-FABP) mRNA
J03037:Human carbonic anhydrase II mRNA
AF007155:Homo sapiens clone 23763 unknown mRNA
X59834:Human rearranged mRNA for glutamine synthase
Mucin 1, Epithelial, Alt. Splice 9
M35198:HUMINTB6A Human integrin B-6 mRNA

Cluster 2

M64347:Human novel growth factor receptor mRNA
U66063:Homo sapiens calcium/calmodulin-dependent protein kinase II mRNA
X52947:Human mRNA for cardiac gap junction protein
L38969:Homo sapiens thrombospondin 3 (THBS3) gene
U17077:Human BENE mRNA
Y09765:Homo sapiens mRNA for putative GABA receptor epsilon subunit
W27541:32c12 Homo sapiens cDNA
M13903:Human involucrin mRNA

AI885381:wI93b01.x1 Homo sapiens cDNA, 3' end
X77956:H.sapiens Id1 mRNA
X07696:Human mRNA for cytokeratin 15
X76220:H.sapiens MAL gene exon 1 (and joined CDS)
AA010777:ze22f06.r1 Homo sapiens cDNA, 5' end
X14487:Human gene for acidic (type I) cytokeratin 10
D83664:Human mRNA for CAAF1 (calcium-binding protein in amniotic fluid 1)
N74607:za55a01.s1 Homo sapiens cDNA, 3' end /clone=IMAGE-296424 /clone_end=3
AB001325:Human AQP3 gene for aquaporin 3 (water channel)
X07695:Human mRNA for cytokeratin 4 C-terminal region
Y08136:H.sapiens mRNA for ASM-like phosphodiesterase 3a
AB012917:Homo sapiens mRNA for serine protease (TLSP)
AJ228139:Homo sapiens mRNA for LETKI precursor
D13891:Human mRNA for Id-2H
M98776 HUMKRT1X Human keratin 1 gene

Cluster 3

M24594:Human interferon-inducible 56 Kd protein mRNA
X70683:H.sapiens mRNA for SOX-4 protein
AF060228:Homo sapiens retinoic acid receptor responder 3 (RARRES3) mRNA
M93056:Human monocyte/neutrophil elastase inhibitor mRNA sequence
X04327:Human erythrocyte 2,3-bisphosphoglycerate mutase mRNA EC 2.7.5.4
AI765533:wi81c01.x1 Homo sapiens cDNA, 3' end /clone=IMAGE-2399712
AF010312:Homo sapiens Pig7 (PIG7) mRNA
J02854:Human 20-kDa myosin light chain (MLC-2) mRNA
U03688:Human dioxin-inducible cytochrome P450 (CYP1B1) mRNA
X54489 HSMGSAG:Human gene for melanoma growth stimulatory activity (MGSA)
X87344:H.sapiens DMA, DMB, HLA-Z1, IPP2, LMP2, TAP1, LMP7, TAP2, DOB, DQB2 and RING8, 9, 13 and 14 genes
X57352:Human 1-8U gene from interferon-inducible gene family
X67325:HSP27 H.sapiens p27 mRNA

Cluster 4

X78565:H.sapiens mRNA for tenascin-C, 7560bp
AA829286:of08a01.s1 Homo sapiens cDNA, 3' end
AA883502:am25h07.s1 Homo sapiens cDNA, 3' end

Cluster 5

M87339:HUMACT1A Human replication factor C, 37-kDa subunit mRNA
L20859:HUMGLVR1X Human leukemia virus receptor 1 (GLVR1) mRNA
Tyrosine Kinase, Receptor Axl, Alt. Splice 2
Rad2
D11139:HUMTIMP Human gene for tissue inhibitor of metalloproteinases, partial sequence
X05360:HSCDC2 Human CDC2 gene involved in cell cycle control
Oncogene Tls/Chop, Fusion Activated
U09937:HSUROKR7 Human urokinase-type plasminogen receptor, exon 7
AB000584:Homo sapiens mRNA for TGF-beta superfamily protein
M60974:HUMGADD45 Human growth arrest and DNA-damage-inducible protein (gadd45) mRNA
Tubulin, Beta
Fibronectin, Alt. Splice 1
K01383:Human metallothionein-I-A gene, complete coding sequence
X02761:Human mRNA for fibronectin (FN precursor)
M10905:Human cellular fibronectin mRNA

M20560:Human lipocortin-III mRNA
AF001294:Homo sapiens IPL (IPL) mRNA
X74929:H.sapiens KRT8 mRNA for keratin 8
AC004770:Homo sapiens chromosome 11, BAC CIT-HSP-311e8 (BC269730) containing hFEN1 gene
AL096880:Novel human mRNA containing Zinc finger C2H2 type domains
AB029001:Homo sapiens mRNA for KIAA1078 protein
AF016266:Homo sapiens TRAIL receptor 2 mRNA
M26326:Human keratin 18 mRNA
M77140:H.sapiens pro-galanin mRNA, 3 end
U65416:Human MHC class I molecule (MICB) gene
AI337192:qx88h10.x1 Homo sapiens cDNA, 3 end
X16277:Human gene for ornithine decarboxylase ODC (EC 4.1.1.17)
U66469:Human cell growth regulator CGR19 mRNA
U63743:Homo sapiens mitotic centromere-associated kinesin mRNA
U90920:Human PTPL1-associated RhoGAP mRNA
U17760:Human laminin S B3 chain (LAMB3) gene
J02923:Human 65-kilodalton phosphoprotein (p65) mRNA
U83981:Homo sapiens apoptosis associated protein (GADD34) mRNA
U08021:Human nicotinamide N-methyltransferase (NNMT) mRNA
AI130910:qb81g08.x1 Homo sapiens cDNA, 3 end
Y00630:Human mRNA for Arg-Serpin (plasminogen activator-inhibitor 2, PAI-2)
X90858:H.sapiens mRNA for uridine phosphorylase
Y10313:Homo sapiens mRNA IFRD1 (PC4) interferon-related developmental regulator
L13463:Human helix-loop-helix basic phosphoprotein (G0S8) mRNA
L34155:Homo sapiens laminin-related protein (LamA3) mRNA
M60278:Human heparin-binding EGF-like growth factor mRNA
M76125:Human tyrosine kinase receptor (axl) mRNA
U52112:neural cell adhesion molecule L1
M33146:Human cysteine-rich peptide mRNA
D86978:Human mRNA for KIAA0225 gene
AI557295:PT2.1_16_D02.r Homo sapiens cDNA, 3 end
Y11307:H.sapiens CYR61 mRNA
AI991040:wu36b05.x1 Homo sapiens cDNA, 3 end
AA631972:fmfc39 Homo sapiens cDNA /clone=CR7-5
AL022318:bK150C2.2 (Phorbolin 3)
S62138:TLS/CHOP=hybrid gene {translocation breakpoint} [human, myxoid liposarcomas cells, mRNA
Mutant, 1682 nt]
R93527:yq35f10.r1 Homo sapiens cDNA, 5 end /clone=IMAGE-197803 /clone_end=5
D80008:Human mRNA for KIAA0186 gene, complete cds
AB000449:Homo sapiens mRNA for VRK1
AF017790:Homo sapiens retinoblastoma-associated protein HEC mRNA
AB014551:Homo sapiens mRNA for KIAA0651 protein
Cluster Incl. H68340:yr82b10.s1 Homo sapiens cDNA, 3 end /clone=IMAGE-211771 /clone_end=3
AB018289:Homo sapiens mRNA for KIAA0746 protein
AI140114:qa95c06.x1 Homo sapiens cDNA, 3 end /clone=IMAGE-1694506 /clone_end=3
AF073308:Homo sapiens nonsyndromic hearing impairment protein (DFNA5) mRNA
U15932:HSU15932 Human dual-specificity protein phosphatase mRNA
U90313:HSU90313 Human glutathione-S-transferase homolog mRNA

Cluster 6

U73379:HSU73379 Human cyclin-selective ubiquitin carrier protein mRNA
U58334:HSU58334 Human Bcl2, p53 binding protein Bbp/53BP2 (BBP/53BP2) mRNA
Neurofibromatosis 2 Tumor Suppressor

X51688:HSCYCLINA Human mRNA for cyclin A
 U89330:HSU89330 Human alternatively spliced microtubule-associated protein 2 (MAP2) mRNA
 M10943:Human metallothionein-If gene (hMT-If)
 W29045:55e12 Homo sapiens
 M57951:Human bilirubin UDP-glucuronosyltransferase isozyme 2 mRNA
 U05861:Human hepatic dihydrodiol dehydrogenase gene
 AF015254:Homo sapiens serine/threonine kinase (STK-1) mRNA
 D26361:Human mRNA for KIAA0042 gene
 AL031670:dJ681N20.2 (ferritin, light polypeptide-like 1)
 D21063:Human mRNA for KIAA0030 gene
 AF027866:Homo sapiens megsin mRNA
 X15414:Human mRNA for aldose reductase (EC 1.1.1.2)
 U16954:Human (AF1q) mRNA
 X04741:Human mRNA for protein gene product (PGP) 9.5
 U55206:Homo sapiens human gamma-glutamyl hydrolase (hGH) mRNA
 D17793:Human mRNA for KIAA0119 gene
 M81600:Human NAD(P)H-quinone oxireductase gene
 L24564:Human Rad mRNA
 U14518:HSU14518 Human centromere protein-A (CENP-A) mRNA
 M15205:HUMTKRA Human thymidine kinase gene

Cluster 7

M33764:HUMSODB Human ornithine decarboxylase gene
 L20852:HUMGLVR2X Human leukemia virus receptor 2 (GLVR2) mRNA
 S81914:IEX-1=radiation-inducible immediate-early gene [human, placenta, mRNA Partial, 1223 nt]
 S78187:S78187 CDC25Hu2=cdc25+ homolog [human, mRNA, 3118 nt]
 D00596:HUMTS1 Homo sapiens gene for thymidylate synthase, exons 1, 2, 3, 4, 5, 6, 7
 L25876:HUMPTPB Homo sapiens protein tyrosine phosphatase (CIP2)mRNA
 L24564:HUMRAD Human Rad mRNA
 AF005775:Homo sapiens caspase-like apoptosis regulatory protein 2 (clarp) mRNA, alternatively spliced
 U37022:HSU37022 Human cyclin-dependent kinase 4 (CDK4) gene
 L19182:HUMMAC25X Human MAC25 mRNA
 Tubulin, Beta
 AL049699:dJ747H23.1 (malic enzyme 1, soluble (NADP-dependent malic enzyme, malate oxidoreductase, EC 1.1.1.40))
 Y13492:Homo sapiens mRNA for smoothelin-B
 M90656:Human gamma-glutamylcysteine synthetase (GCS) mRNA
 AJ224875:Homo sapiens mRNA for putative glucosyltransferase
 AL038340:DKFZp566K192_s1 Homo sapiens cDNA, 3' end
 AL080146:Homo sapiens mRNA; cDNA DKFZp434B174
 AL041663:DKFZp434M0217_s1 Homo sapiens cDNA, 3' end
 J02966:Human mitochondrial ADP/ADT translocator mRNA
 AC005192:Homo sapiens BAC clone RG163K11 from 7q31
 M61764:Human gamma-tubulin mRNA
 U49248:Human canalicular multispecific organic anion transporter (cMOAT), gene
 Z82244:bK286B10.2 (Heme Oxygenase 1 (HO-1, EC 1.14.99.3))
 L20941:Human ferritin heavy chain mRNA
 X76648:H.sapiens mRNA for glutaredoxin
 AA151971:zo30b03.r1 Homo sapiens cDNA, 5' end /clone=IMAGE-588365
 U74612:Human hepatocyte nuclear factor-3/fork head homolog 11A (HFH-11A) mRNA
 Z23115:H.sapiens bcl-xL mRNA
 AJ236876:Homo sapiens mRNA for poly(ADP-ribose) polymerase-2
 AF011468:Homo sapiens serine/threonine kinase (BTAK) mRNA

Z97029:Homo sapiens mRNA for ribonuclease H I large subunit
M92642:Homo sapiens alpha-1 type XVI collagen (COL16A1) mRNA
AI982638:wt53c06.x1 Homo sapiens cDNA, 3' end
X92518:H.sapiens mRNA for HMGI-C protein
AF061016:Homo sapiens UDP-glucose dehydrogenase (UGDH) mRNA
AJ012737:Homo sapiens mRNA for filamin, muscle isoform
L76259:Homo sapiens PTS gene
AF053306:Homo sapiens mitotic checkpoint kinase Mad3L (MAD3L) mRNA
R92331:yq03h03.r1 Homo sapiens cDNA, 5' end
D67029:Human SEC14L mRNA
M21539:Human small proline rich protein (sprII) mRNA, clone 1292
Y15521:Homo sapiens ASMTL gene
M27396:Human asparagine synthetase mRNA
M21302:Human small proline rich protein (sprII) mRNA, clone 174N
U96131:Homo sapiens HPV16 E1 protein binding protein mRNA
L20852:Human leukemia virus receptor 2 (GLVR2) mRNA
U58970:Human putative outer mitochondrial membrane 34 kDa translocase hTOM34 mRNA
X92720:H.sapiens mRNA for phosphoenolpyruvate carboxykinase
AB007938:Homo sapiens mRNA for KIAA0469 protein
AF014118:Homo sapiens membrane-associated kinase (Myt1) mRNA
AA926959:om68h08.s1 Homo sapiens cDNA, 3' end
D17530:Homo sapiens mRNA for drebrin E
X59892:H.sapiens mRNA for IFN-inducible gamma2 protein
AI961220:wt15b04.x1 Homo sapiens cDNA, 3' end
D31887:Human mRNA for KIAA0062 gene
AA224832:nc33b06.s1 Homo sapiens cDNA /clone=IMAGE-1009907
U87947:Human hematopoietic neural membrane protein (HNMP-1) mRNA
X79535:H.sapiens mRNA for beta tubulin, clone nuk_278
X91247:H.sapiens mRNA for thioredoxin reductase
AB011164:Homo sapiens mRNA for KIAA0592 protein
D12763:Homo sapiens mRNA for ST2 protein
U76366:Human Treacher Collins syndrome (TCOF1) mRNA
AB001928:Homo sapiens mRNA for cathepsin V
U04953:Human isoleucyl-tRNA synthetase mRNA
U46751:Human phosphotyrosine independent ligand p62 for the Lck SH2 domain mRNA
K02581:Human thymidine kinase mRNA
L10343:Human elafin gene
AF034373:Homo sapiens ataxin-2-like protein A2LP (A2LG) mRNA
AC004770:Homo sapiens chromosome 11, BAC CIT-HSP-311e8 (BC269730) containing the hFEN1
U56816:HSU56816 Human kinase Myt1 (Myt1) mRNA
M86699:HUMTTK Human kinase (TTK) mRNA
U43944:HSU43944 Human breast cancer cytosolic NADP(+)-dependent malic enzyme mRNA
U48296:HSU48296 Homo sapiens protein tyrosine phosphatase PTPCAAX1 (hPTPCAAX1) mRNA
X59770:HSIL1R2II H.sapiens IL-1R2 mRNA for type II interleukin-1 receptor, (cell line CB23)