

Supplementary Table 5. Biological associations of the P(H)AH-deregulated human homologs (68) generated by Ingenuity Pathway Analysis (IPA) software.

Description of Biological Association	P-value	Molecules (human homologs) Involved	
		Number	Percentage
Molecular and Cellular Functions			
Cell Signaling	1.29E-07-8.41E-03	31	45.6%
Cell Death	1.05E-04-9.87E-03	31	45.6%
Small Molecule Biochemistry	4.64E-07-9.87E-03	25	36.8%
Cellular Growth and Proliferation	1.8E-04-9.75E-03	23	33.8%
Lipid Metabolism	9.58E-06-9.63E-03	21	30.9%
Gene Expression	9.87E-05-9.87E-03	17	25.0%
Cellular Development	6.63E-04-9.31E-03	17	25.0%
Cellular Movement	1.68E-04-8.96E-03	15	22.1%
Cell Cycle	1.17E-03-9.82E-03	14	20.6%
Molecular Transport	1.54E-03-9.63E-03	14	20.6%
Drug Metabolism	1.29E-07-5.72E-03	12	17.6%
Cellular Assembly and Organization	1.92E-04-8.41E-03	11	16.2%
Cellular Function and Maintenance	1.92E-04-8.6E-03	11	16.2%
Cell-To-Cell Signaling and Interaction	6.64E-04-9.87E-03	8	11.8%
Cellular Compromise	1.06E-03-4.95E-03	8	11.8%
Cell Morphology	1.06E-03-9.61E-03	7	10.3%
Nucleic Acid Metabolism	1.06E-03-9.61E-03	6	8.8%
Vitamin and Mineral Metabolism	9.58E-06-4.95E-03	4	5.9%
Amino Acid Metabolism	1.54E-03-6.74E-03	4	5.9%
Energy Production	4.83E-03-4.95E-03	4	5.9%
DNA Replication, Recombination, and Repair	4.95E-03-4.95E-03	2	2.9%
Free Radical Scavenging	4.95E-03-4.95E-03	1	1.5%
Post-Translational Modification	4.95E-03-4.95E-03	1	1.5%
Protein Degradation	4.95E-03-4.95E-03	1	1.5%
Protein Synthesis	4.95E-03-4.95E-03	1	1.5%
RNA Damage and Repair	4.95E-03-4.95E-03	1	1.5%
RNA Post-Transcriptional Modification	4.95E-03-4.95E-03	1	1.5%

* Gene symbol in red or green lettering indicates that the gene is up- or down-regulated, respectively.

Supplementary Table 5. (Continued)

Description of Biological Association	P-value	Molecules (human homologs) Involved		
		Number	Percentage	
Physiological System Development and Function				
Hematological System Development and Function	2.16E-05-8.06E-03	19	27.9%	RAC1,CXCL14,MMP13,FABP1,NOS2A,GSTP1,SLC3A2,IGF1,ABCG2,NR3C1,STAT1,NFE2L2,PLP1,AHR,NQO1,PPM1D,ANXA1,NP,SCAMP2
Tissue Morphology	2.16E-05-9E-03	16	23.5%	RAC1,FOSL2,MMP13,RPS6KA1,FABP1,GSTP1,NOS2A,IGF1,ABCG2,NR3C1,NFE2L2,PLP1,AHR,NQO1,PPM1D,NP
Immune and Lymphatic System Development and Function	2.64E-05-5.24E-03	15	22.1%	SCIN,MMP13,RPS6KA1,FABP1,NOS2A,GSTP1,IGF1,ABCG2,NR3C1,CTBP1,PLP1,AHR,NQO1,PPM1D,NP
Connective Tissue Development and Function	6.64E-04-9.46E-03	12	17.6%	IGF1,NR3C1,HOXA2,STAT1,RAC1,FOSL2,MMP13,AHR,NQO1,GSTP1,PPM1D,NOS2A
Tissue Development	8.44E-05-9.61E-03	11	16.2%	IGF1,NR3C1,HOXA2,STAT1,CTBP1,RAC1,FOSL2,MMP13,FLII,GRHL3,NOS2A
Endocrine System Development and Function	2.42E-05-5.72E-03	10	14.7%	CYP1A1,SULT2B1,ABCG2,IGF1,CYP2C19,LPHN2,AHR,RPS6KA1,CYP1B1,GSTP1
Skeletal and Muscular System Development and Function	2.39E-04-9.75E-03	9	13.2%	IGF1,NR3C1,HOXA2,STAT1,RAC1,FOSL2,MMP13,AHR,NOS2A
Organismal Development	6.62E-05-7.27E-03	8	11.8%	IGF1,NR3C1,CTBP1,MMP13,RPS6KA1,PPM1D,NOS2A,ODC1
Immune Response	1.95E-03-8.06E-03	8	11.8%	IGF1,RAC1,CXCL14,NFE2L2,PLP1,NOS2A,ANXA1,SCAMP2
Organ Development	2.89E-05-6.74E-03	7	10.3%	IGF1,NR3C1,FOSL2,CXCL14,CYP1B1,NOS2A,ODC1
Visual System Development and Function	2.89E-05-9.87E-03	6	8.8%	IGF1,NR3C1,FOSL2,CXCL14,CYP1B1,NOS2A
Nervous System Development and Function	3.58E-04-9.87E-03	6	8.8%	IGF1,NR3C1,STAT1,RAC1,PLP1,NOS2A
Cardiovascular System Development and Function	3.51E-03-6.74E-03	6	8.8%	IGF1,LPL,MMP13,AHR,NOS2A,ODC1
Embryonic Development	4.08E-03-4.95E-03	6	8.8%	SLC3A2,IGF1,RAC1,FOSL2,AHR,FLII
Organ Morphology	4.95E-03-9.61E-03	6	8.8%	IGF1,NR3C1,TNXB,TECTA,AHR,NOS2A
Reproductive System Development and Function	1.68E-04-9.61E-03	4	5.9%	ELF3,IGF1,RAC1,NOS2A
Hepatic System Development and Function	6.64E-04-3.51E-03	3	4.4%	IGF1,STAT1,MMP13
Auditory and Vestibular System Development and Function	4.95E-03-4.95E-03	2	2.9%	IGF1,TECTA
Hair and Skin Development and Function	4.95E-03-4.95E-03	2	2.9%	IGF1,TNXB
Digestive System Development and Function	4.95E-03-4.95E-03	1	1.5%	IGF1
Renal and Urological System Development and Function	4.95E-03-4.95E-03	1	1.5%	IGF1
Tumor Morphology	4.95E-03-4.95E-03	1	1.5%	IGF1

* Gene symbol in red or green lettering indicates that the gene is up- or down-regulated, respectively.

Supplementary Table 5. (Continued)

Description of Biological Association	P-value	Molecules (human homologs) Involved	
		Number	Percentage
Diseases and Disorders			
Cancer**	1.98E-05-9.82E-03	34	50.0%
Reproductive System Disease**	1.05E-04-9.75E-03	16	23.5%
Hematological Disease	8.61E-04-9.43E-03	14	20.6%
Inflammatory Disease**	4.99E-04-9.87E-03	13	19.1%
Genetic Disorder	4.95E-03-6.45E-03	13	19.1%
Immunological Disease**	5.02E-04-9.87E-03	12	17.6%
Organismal Injury and Abnormalities	8.8E-04-9.75E-03	10	14.7%
Endocrine System Disorders**	1.08E-03-7.03E-03	9	13.2%
Metabolic Disease	2.28E-03-9.03E-03	9	13.2%
Neurological Disease**	4.99E-04-9.87E-03	8	11.8%
Dermatological Diseases and Conditions	1.25E-03-9.61E-03	8	11.8%
Connective Tissue Disorders	4.95E-03-9.87E-03	7	10.3%
Respiratory Disease	1.03E-03-9.87E-03	6	8.8%
Viral Function	2.39E-04-9E-03	5	7.4%
Developmental Disorder	5.71E-04-4.95E-03	4	5.9%
Ophthalmic Disease	1.06E-03-7.27E-03	4	5.9%
Cardiovascular Disease	1.25E-03-4.95E-03	4	5.9%
Hepatic System Disease	2.12E-03-9E-03	4	5.9%
Skeletal and Muscular Disorders	3.51E-03-9.87E-03	4	5.9%
Infectious Disease	6.74E-03-7.27E-03	4	5.9%
Gastrointestinal Disease	4.95E-03-9E-03	3	4.4%
Nutritional Disease	5.03E-03-5.03E-03	3	4.4%
Renal and Urological Disease	1.29E-03-1.54E-03	2	2.9%
Psychological Disorders	9.87E-03-9.87E-03	1	1.5%

* Gene symbol in red or green lettering indicates that the gene is up- or down-regulated, respectively.

**Associated with AHR, NR3C1/GR, STAT1 and IGF1 molecules.