

Hermansky-Pudlak Syndrome (HPS) Panel (Test # 760)

Brief Description of Clinical Features: Hermansky-Pudlak Syndrome (HPS) (OMIM 203300) is characterized by tyrosinase-positive oculocutaneous albinism, bleeding diathesis, and significant reduction in visual acuity often complicated by nystagmus (Hermansky, Pudlak *Blood* 14:162-169, 1959). HPS patients may develop granulomatous colitis, with onset usually in their teens, and/or pulmonary fibrosis, with onset typically in their thirties or forties (Gahl et al *N Engl J Med* 338:1258-1264, 1998). Similar characteristics are found with the related Chediak-Higashi Syndrome (CHS) (OMIM 214500). HPS and CHS are storage pool disorders. Disease is attributed to aberrant storage granules such as melanosomes, platelet-dense granules, and lysosomes.

Genetics: HPS is an autosomal recessive disorder associated with the *HPS1*, *AP3B1*/*(HPS2)*, *HPS3*, *HPS4*, *HPS5*, *HPS6*, *DTNBPI*/*(HPS7)*, and *BLOC1S3*/*(HPS8)* genes. HPS is unusually common in Puerto Rico where the estimated carrier frequency is 1 in 21 (Wildenberg et al *Am J Hum Genet* 57:755-765, 1995). Most affected Puerto Ricans harbor mutations in *HPS1*. In non-Puerto Ricans, *HPS1* mutations account for ~50% of cases (Oh et al *Am J Hum Genet* 62:593-598, 1998) with the remaining cases being distributed as follows: *AP3B1*/*(HPS2)* ~6%, *HPS3* ~15%, *HPS4* ~12%, *HPS5* ~5%, *HPS6* ~4%, *DTNBPI*/*(HPS7)* ~1%, and *BLOC1S3*/*(HPS8)* ~2%. For more information, please see the Test Descriptions for individual HPS genes (and the *LYST* gene for Chediak-Higashi Syndrome) at <http://preventiongenetics.com/ClinicalTesting/TestsByGene.htm>.

Description of This Particular Test: This test involves bidirectional DNA sequencing of the eight HPS genes plus ~50 bp of flanking non-coding DNA on either side of each exon. Genes will be tested sequentially in the order specified by the client. The default gene order is indicated in the Price Table below. Individual HPS gene sequencing tests are also available.

Reference Sequences:	Gene:	Genomic: NC_	mRNA: NM_	Exons	Protein: NP_	CCDS:
	<i>HPS1</i>	000010.10	00195.2	18	000186.2	7475.1
	<i>AP3B1 (HPS2)</i>	000005.9	003664.3	27	003655.3	4041.1
	<i>HPS3</i>	000003.11	032383.3	17	115759.2	3140.1
	<i>HPS4</i>	000022.10	022081.4	13	071364.4	13835.1
	<i>HPS5</i>	000011.9	181507.1	22	852608.1	7836.1
	<i>HPS6</i>	000010.10	024747.4	1	079023.2	7527.1
	<i>DTNBPI (HPS7)</i>	000006.11	032122.4	10	115498.2	4534.1
	<i>BLOC1S3 (HPS8)</i>	000019.9	212550.3	1	997715.1	12656.1

Indications for Test: Patients with symptoms or family history of HPS, CHS, or Griscelli Syndrome, patients with any degree of hypopigmentation or bleeding diathesis, and patients with morphologically abnormal granulocytes or platelets.

Sensitivity of Test: Causative mutations in the eight HPS genes account for nearly all cases of HPS.

Turnaround Time: Maximum of 80 calendar days.

Specimen Requirements: See page 4 of the Requisition Form

Price: Sequential Sequencing of *HPS1*, *HPS3*, *HPS4*, *AP3B1*, *HPS5*, *HPS6*, *DTNBPI* and *BLOC1S3* Genes

When four or more of the genes are tested, a 15% discount will apply to the total cost of the tests.

CPT Codes:	<i>HPS1</i>	<i>HPS3</i>	<i>HPS4</i>	<i>AP3B1</i> / <i>(HPS2)</i>	<i>HPS5</i>	<i>HPS6</i>	<i>DTNBPI</i> / <i>(HPS7)</i>	<i>BLOC1S3</i> / <i>(HPS8)</i>	Panel (Discounted) Prices
83890	\$ 30 (x1)	\$ 30 (x1)	\$ 30 (x1)	\$ 30 (x1)	\$ 30 (x1)	\$ 30 (x1)	\$ 30 (x1)	\$ 30 (x1)	\$ 30 (x1)
83891	\$ 40 (x1)	\$ 40 (x1)	\$ 40 (x1)	\$ 40 (x1)	\$ 40 (x1)	\$ 40 (x1)	\$ 40 (x1)	\$ 40 (x1)	\$ 40 (x1)
83898	\$250(x16)	\$300(x18)	\$240(x15)	\$420(x27)	\$320(x20)	\$160(x9)	\$190(x11)	\$ 80 (x3)	\$2050 (x119)
83904	\$380(x16)	\$440(x18)	\$350(x15)	\$620(x27)	\$490(x20)	\$240(x9)	\$280(x11)	\$130 (x3)	\$3070 (x119)
83894	\$ 70 (x1)	\$ 55 (x1)	\$ 45 (x1)	\$ 80 (x1)	\$ 60 (x1)	\$ 35 (x1)	\$ 35 (x1)	\$ 20 (x1)	\$ 330 (x1)
83912	\$120 (x1)	\$115 (x1)	\$115 (x1)	\$130 (x1)	\$120 (x1)	\$115(x1)	\$115 (x1)	\$ 90 (x1)	\$ 230 (x1)
Totals:	\$890	\$ 980	\$820	\$1320	\$1060	\$620	\$690	\$390	\$5750

Accreditation: CLIA ID #: 52D1027685 (expires 1/18/13) (CAP#: 7185561, AU ID: 1407125 expires 12/20/12)

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