

Title: High *HMMR* expression is prognostically unfavorable in neuroblastoma and HMMR has oncoprotein-like properties in neuroblastoma cells while modulating phosphorylation in multiple signaling pathways.

Journal Name: Cellular Oncology

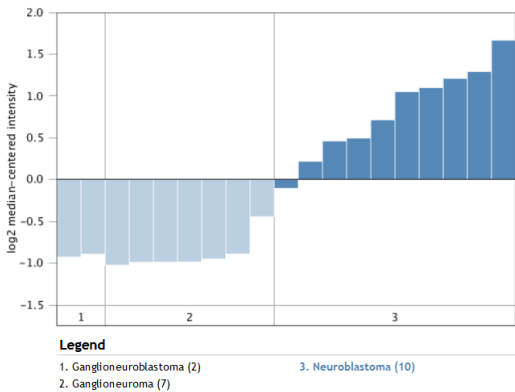
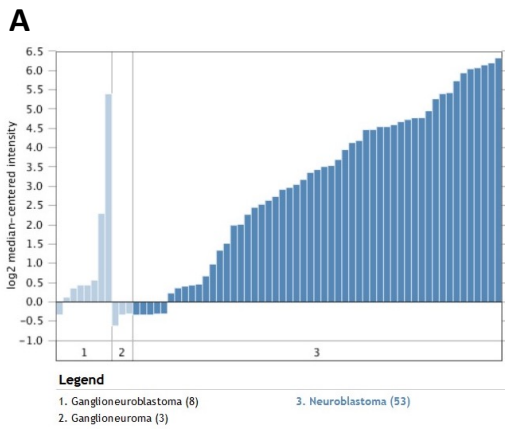
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Online Resource 1



B

Over-expression

Median Rank	p-Value	Gene
413.5	1.92E-4	HMMR
2447.0	0.011	HYAL3
4226.5	0.027	HYAL4
6384.5	0.413	CD44
6940.0	0.392	HAS1
9199.5	0.351	HYAL2
14401.5	0.946	HYAL1
15443.0	0.977	HAS2
-	-	HAS3

1 2

hyaluronic acid binding

Median Rank	p-Value	Gene
413.5	1.92E-4	HMMR
1641.0	0.003	BCAN
3636.0	0.052	ACAN
3762.5	0.019	NCAN
4660.0	0.031	HAPLN1
4964.0	0.036	HAPLN2
6384.5	0.413	CD44
7154.5	0.098	IMPG2
7655.0	0.232	VCAN
14476.0	0.956	LYVE1
15094.5	0.983	TNFAIP6
-	-	HAPLN3
-	-	HAPLN4

1 2

cell motility

Median Rank	p-Value	Gene
413.5	1.92E-4	HMMR
1212.5	0.001	HGFAC
1309.5	0.003	WASF1
1532.0	0.007	TSPAN2
1818.5	0.005	PAK4
1920.5	0.004	AKAP4
1987.5	0.006	KPTN
2017.0	0.004	MAPK8
3268.5	0.022	DNAH9
3328.5	0.027	NTN1
3660.5	0.028	TXN
3762.5	0.019	NCAN
3763.5	0.093	CXCR2
4120.5	0.026	MTSS1
4558.0	0.043	LTB4R
4580.5	0.030	SERPINB5
5031.0	0.037	WASL
5132.5	0.044	MMP12
5246.5	0.088	IL13
5259.5	0.045	MST1R

1 2

1. Neuroblastic Tumor Type: Neuroblastoma
Albino Brain, Cancer, 2008

2. Neuroblastic Tumor Type: Neuroblastoma
Janoueix-Lerosey Brain, Nature, 2008

1 5 10 25 25 10 5 1
← % → Not measured