

**Online Resource 1a. *EPHA* mRNA Expression,
SHH vs. Non-SHH MB (Group 3 and 4)**

Tumor histology	Sample type	Pt. age	Pt. status	Sub-group	<i>EPH</i> A2	<i>EPH</i> A3	<i>EPH</i> A4	<i>EPH</i> A5	<i>EPH</i> A7	<i>EPH</i> A8	<i>EPHA</i> 10
Desmoplastic	Diagnostic	1 y	deceased	SHH	ND	325	47	15	227	ND	ND
Desmoplastic	Diagnostic	2 y	alive	SHH	ND	119	23	7	423	ND	32
Desmoplastic, M+	Diagnostic	5 y	alive	SHH	ND	25	84	29	264	ND	ND
MBEN	Diagnostic	1 y	deceased	SHH	ND	128	143	63	379	56	18
Anaplastic	Post-Rx	3 y	deceased	SHH	119	29	516	11	52	ND	ND
Classic	Diagnostic	9 m	alive	SHH	ND	652	45	ND	36	ND	24
Classic,	Diagnostic	2 y	deceased	SHH	ND	116	85	7	203	ND	15
Classic	Post-Rx	2 y	deceased	SHH	ND	177	23	72	520	ND	16
Classic	Diagnostic	4 y	alive	SHH	ND	265	252	ND	223	27	ND
Classic	Diagnostic	5 y	alive	SHH	ND	38	16	ND	111	34	32
Classic, M+	Post-Rx	7 y	deceased	SHH	159	229	96	19	72	117	ND
Mean expression SHH:					139	191	121	27	228	58	23
% positive SHH:					18	100	100	73	100	36	54
Anaplastic	Diagnostic	3 y	alive	3	95	161	473	26	78	264	112
Anaplastic	Diagnostic	2 y	alive	4	661	18	47	ND	99	736	82
Anaplastic	Diagnostic	6 y	alive	4	214	11	43	25	268	204	63
Classic	Diagnostic	6 m	alive	4	ND	73	211	ND	ND	134	ND
Classic	Diagnostic	1 y	alive	3	430	91	167	ND	466	343	39
Classic	Diagnostic	2 y	alive	4	360	159	132	ND	101	569	17
Classic	Diagnostic	2 y	alive	3	60	61	57	215	91	335	150
Classic, M+	Diagnostic	2 y	alive	3	71	172	1173	42	1610	32	52
Classic	Diagnostic	3 y	alive	4	228	1292	86	ND	502	445	29
Classic, M+	Diagnostic	5 y	deceased	3	239	464	881	14	419	451	50
Classic, M+	Diagnostic	6 y	deceased	4	50	1564	79	114	40	390	29
Classic	Diagnostic	6 y	alive	4	ND	31	44	ND	43	237	24
Classic, M+	Diagnostic	8 y	deceased	4	ND	126	1117	207	83	250	ND
Classic	Diagnostic	11 y	alive	3	236	31	238	19	355	212	38
Classic	Diagnostic	11 y	alive	4	ND	1492	93	57	ND	329	21
Classic	Diagnostic	11 y	alive	3	ND	85	116	40	68	114	ND
Classic	Diagnostic	12 y	alive	4	225	579	404	19	51	914	53
Classic	Diagnostic	16 y	alive	4	437	29	36	ND	ND	57	27
Mean expression non-SHH:					254	358	300	71	285	334	52
% positive non-SHH:					72	100	100	61	83	100	83
Overall mean expression:					238	295	232	34	260	294	44
Overall % positive:					52	100	100	66	90	100	72

**Online Resource 1b. *EPHA* mRNA Expression,
Desmoplastic vs. Non-Desmoplastic SHH MB**

Tumor histology	Sample type	Pt. age	Pt. status	Sub-group	<i>EPH</i> A2	<i>EPH</i> A3	<i>EPH</i> A4	<i>EPH</i> A5	<i>EPH</i> A7	<i>EPH</i> A8	<i>EPHA</i> 10
Desmoplastic	Diagnostic	1 y	deceased	SHH	ND	325	23	15	227	ND	ND
Desmoplastic	Diagnostic	2 y	alive	SHH	ND	119	84	7	423	ND	32
Desmoplastic, M+	Diagnostic	5 y	alive	SHH	ND	25	32	29	264	ND	ND
Mean expression desmoplastic SHH:					0	156	51	17	305	0	32
% positive desmoplastic SHH:					0	100	100	100	100	0	33
MBEN	Diagnostic	1 y	deceased	SHH	ND	128	516	63	379	56	18
Anaplastic	Post-Rx	3 y	deceased	SHH	119	29	45	11	52	ND	ND
Classic	Diagnostic	9 m	alive	SHH	ND	652	85	ND	36	ND	24
Classic	Diagnostic	2 y	deceased	SHH	ND	116	23	7	203	ND	15
Classic	Diagnostic	2 y	deceased	SHH	ND	177	252	72	520	ND	16
Classic	Diagnostic	4 y	alive	SHH	ND	265	16	ND	223	27	ND
Classic	Diagnostic	5 y	alive	SHH	ND	38	96	ND	111	34	32
Classic, M+	Post-Rx	7 y	deceased	SHH	159	229	21.8	19	72	117	ND
Mean expression non-desmoplastic SHH:					139	204	148	34	199	58	21
% positive non-desmoplastic SHH:					25	100	100	63	100	50	63

MB, medulloblastoma; Rx, treatment; Pt. age, patient age at diagnosis; SHH, sonic hedgehog; MBEN, medulloblastoma with extensive nodularity; M+, metastatic; y, years; m, months; ND, not detected

**Online Resource 1c. *EPHB* mRNA Expression,
SHH vs. Non-SHH MB**

Tumor histology	Sample type	Pt. age	Pt. status	Sub-group	<i>EPH B1</i>	<i>EPH B2</i>	<i>EPH B4</i>	<i>EPH B6</i>
Desmoplastic	Diagnostic	1 y	deceased	SHH	212	95	196	ND
Desmoplastic	Diagnostic	2 y	alive	SHH	223	120	111	17
Desmoplastic, M+	Diagnostic	5 y	alive	SHH	135	64	201	44
MBEN	Diagnostic	1 y	deceased	SHH	152	73	ND	145
Anaplastic	Post-Rx	3 y	deceased	SHH	333	85	289	19
Classic	Diagnostic	9 m	alive	SHH	176	133	164	27
Classic,	Diagnostic	2 y	deceased	SHH	334	121	143	36
Classic	Post-Rx	2 y	deceased	SHH	640	138	114	14
Classic	Diagnostic	4 y	alive	SHH	95	60	211	112
Classic	Diagnostic	5 y	alive	SHH	ND	70	380	46
Classic, M+	Post-Rx	7	deceased	SHH	157	71	247	135
Mean expression SHH:					246	94	206	59
% positive SHH:					91	100	91	91
Anaplastic	Diagnostic	3 y	alive	3	478	70	ND	95
Anaplastic	Diagnostic	2 y	alive	4	110	72	ND	67
Anaplastic	Diagnostic	6 y	alive	4	274	76	ND	49
Classic	Diagnostic	6 m	alive	4	ND	215	167	167
Classic	Diagnostic	1 y	alive	3	201	115	ND	407
Classic	Diagnostic	2 y	alive	4	121	103	ND	116
Classic	Diagnostic	2 y	alive	3	877	128	ND	136
Classic, M+	Diagnostic	2 y	alive	3	29	165	ND	475
Classic	Diagnostic	3 y	alive	4	194	93	ND	107
Classic, M+	Diagnostic	5 y	deceased	3	239	159	ND	53
Classic, M+	Diagnostic	6 y	deceased	4	474	150	ND	393
Classic	Diagnostic	6 y	alive	4	407	192	ND	51
Classic, M+	Diagnostic	8 y	deceased	4	354	144	ND	172
Classic	Diagnostic	11 y	alive	3	79	89	ND	500
Classic	Diagnostic	11 y	alive	4	563	104	ND	102
Classic	Diagnostic	11 y	alive	3	1137	143	ND	111
Classic	Diagnostic	12 y	alive	4	46	187	ND	49
Classic	Diagnostic	16 y	alive	4	54	49	ND	17
Mean expression non-SHH:					331	125	167	170
% positive non-SHH:					94	100	5	100
Overall mean expression:					300	113	202	130
Overall % positive:					93	100	38	97

**Online Resource 1d. *EPHB* mRNA Expression,
Desmoplastic vs. Non-Desmoplastic SHH MB**

Tumor histology	Sample type	Pt. age	Pt. status	Sub-group	<i>EPH B1</i>	<i>EPH B2</i>	<i>EPH B4</i>	<i>EPHB 6</i>
Desmoplastic	Diagnostic	1 y	deceased	SHH	212	95	196	ND
Desmoplastic	Diagnostic	2 y	alive	SHH	223	120	111	17
Desmoplastic, M+	Diagnostic	5 y	alive	SHH	135	64	201	44
Mean expression desmoplastic SHH:					190	93	169	30
% positive desmoplastic SHH:					100	100	100	67
MBEN	Diagnostic	1 y	deceased	SHH	152	73	ND	145
Anaplastic	Post-Rx	3 y	deceased	SHH	333	85	289	19
Classic	Diagnostic	9 m	alive	SHH	176	133	164	27
Classic	Diagnostic	2 y	deceased	SHH	334	121	143	36
Classic	Diagnostic	2 y	deceased	SHH	640	138	114	14
Classic	Diagnostic	4 y	alive	SHH	95	60	211	112
Classic	Diagnostic	5 y	alive	SHH	ND	70	380	46
Classic, M+	Post-Rx	7 y	deceased	SHH	152	73	ND	145
Mean expression non-desmoplastic SHH:					269	94	221	67
% positive non-desmoplastic SHH:					87	100	75	100

MB, medulloblastoma; Rx, treatment; Pt. age, patient age at diagnosis; SHH, sonic hedgehog; MBEN, medulloblastoma with extensive nodularity; M+, metastatic; y, years; m, months; ND, not detected

**Online Resource 1e. *EFNA*, *EFNB* mRNA Expression,
SHH vs. Non-SHH MB**

Tumor histology	Sample type	Pt. age	Pt. status	Sub-group	<i>EFN A1</i>	<i>EFN A3</i>	<i>EFN A4</i>	<i>EFN A5</i>	<i>EFN B1</i>	<i>EFN B2</i>	<i>EFN B3</i>
Desmoplastic	Diagnostic	1 y	deceased	SHH	ND	ND	39	297	ND	489	222
Desmoplastic	Diagnostic	2 y	alive	SHH	ND	51	31	395	ND	861	357
Desmoplastic, M+	Diagnostic	5 y	alive	SHH	53	ND	92	388	ND	1029	192
MBEN	Diagnostic	1 y	deceased	SHH	ND	ND	62	502	30	381	425
Anaplastic	Post-Rx	3 y	deceased	SHH	ND	63	125	319	38	1021	418
Classic	Diagnostic	9 m	alive	SHH	ND	ND	75	295	ND	400	570
Classic,	Diagnostic	2 y	deceased	SHH	103	ND	31	400	ND	669	286
Classic	Post-Rx	2 y	deceased	SHH	ND	ND	27	862	ND	598	192
Classic	Diagnostic	4 y	alive	SHH	127	ND	83	389	32	724	441
Classic	Diagnostic	5 y	alive	SHH	ND	ND	ND	193	ND	317	309
Classic, M+	Post-Rx	7 y	deceased	SHH	273	ND	ND	217	ND	581	454
Mean expression SHH:					139	57	63	387	33	643	351
% positive SHH:					36	18	82	100	27	100	100
Anaplastic	Diagnostic	3 y	alive	3	124	63	ND	161	ND	283	824
Anaplastic	Diagnostic	2 y	alive	4	ND	ND	ND	42	ND	166	339
Anaplastic	Diagnostic	6 y	alive	4	120	ND	ND	627	ND	196	1002
Classic	Diagnostic	6 m	alive	4	667	192	ND	902	ND	1101	ND
Classic	Diagnostic	1 y	alive	3	201	63	ND	144	ND	213	1547
Classic	Diagnostic	2 y	alive	4	515	56	ND	42	ND	325	511
Classic	Diagnostic	2 y	alive	3	139	74	ND	589	ND	206	955
Classic, M+	Diagnostic	2 y	alive	3	153	ND	30	656	ND	1167	244
Classic	Diagnostic	3 y	alive	4	175	73	ND	359	23	126	842
Classic, M+	Diagnostic	5 y	deceased	3	285	ND	ND	172	ND	237	303
Classic, M+	Diagnostic	6 y	deceased	4	226	95	ND	248	44	201	804
Classic	Diagnostic	6 y	alive	4	ND	41	ND	59	ND	153	557
Classic, M+	Diagnostic	8 y	deceased	4	ND	52	ND	128	45	508	454
Classic	Diagnostic	11 y	alive	3	ND	ND	ND	84	ND	283	562
Classic	Diagnostic	11 y	alive	4	343	154	ND	63	34	272	1187
Classic	Diagnostic	11 y	alive	3	80	65	ND	64	ND	238	293
Classic	Diagnostic	12 y	alive	4	ND	ND	ND	168	29	99	497
Classic	Diagnostic	16 y	alive	4	90	ND	ND	334	ND	185	ND
Mean expression non-SHH:					240	84	30	269	35	331	682
% positive non-SHH:					72	61	5	100	28	100	89
Overall mean expression:					216	80	60	314	34	449	547
Overall % positive:					59	45	34	100	28	100	93

**Online Resource 1f. *EFNA*, *EFNB* mRNA Expression,
Desmoplastic vs. Non-Desmoplastic SHH MB**

Tumor histology	Sample type	Pt. age	Pt. status	Sub-group	<i>EFN</i> <i>A1</i>	<i>EFN</i> <i>A3</i>	<i>EFN</i> <i>A4</i>	<i>EFN</i> <i>A5</i>	<i>EFN</i> <i>B1</i>	<i>EFN</i> <i>B2</i>	<i>EFN</i> <i>B3</i>
Desmoplastic	Diagnostic	1 y	deceased	SHH	ND	ND	39	297	ND	489	222
Desmoplastic	Diagnostic	2 y	alive	SHH	ND	51	31	395	ND	861	357
Desmoplastic, M+	Diagnostic	5 y	alive	SHH	53	ND	92	388	ND	1029	192
Mean expression desmoplastic SHH:					53	51	54	360	0	793	257
% positive desmoplastic SHH:					33	33	100	100	0	100	100
MBEN	Diagnostic	1 y	deceased	SHH	ND	ND	62	502	30	381	425
Anaplastic	Post-Rx	3 y	deceased	SHH	ND	63	125	319	38	1021	418
Classic	Diagnostic	9 m	alive	SHH	ND	ND	75	295	ND	400	570
Classic	Diagnostic	2 y	deceased	SHH	103	ND	31	400	ND	669	286
Classic	Diagnostic	2 y	deceased	SHH	ND	ND	27	862	ND	598	192
Classic	Diagnostic	4 y	alive	SHH	127	ND	83	389	32	724	441
Classic	Diagnostic	5 y	alive	SHH	ND	ND	ND	193	ND	317	309
Classic, M+	Post-Rx	7 y	deceased	SHH	273	ND	ND	217	ND	581	454
Mean expression non-desmoplastic SHH:					168	63	67	397	33	586	387
% positive non-desmoplastic SHH:					37	12	75	100	37	100	100

MB, medulloblastoma; Rx, treatment; Pt. age, patient age at diagnosis; SHH, sonic hedgehog; MBEN, medulloblastoma with extensive nodularity; M+, metastatic; y, years; m, months; ND, not detected

EphrinB1 expression is dysregulated and promotes oncogenic signaling in medulloblastoma

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