

Table 1. Patients Demographics and BRAF and NRAS Mutation Status

Pt.	Age at excision	Sex	Localization	Max. diameter [cm]	Diagnosis	Classification [45]	NRAS	BRAF	Cell culture
1	0.5	F	Trunk	14	CMN	L2	Q61K	wt	FE08
2	0.6	F	Arm	6	CMN	M2	Q61K	wt	
3	0.6	F	Trunk	30	CMN	G2	Q61K	wt	
4	0.6	F	Leg	5	CMN	M2	Q61K	wt	
5	0.6	F	Head	3	CMN	M1	Q61K	wt	
6	0.8	F	Arm	6	CMN	M2	NA	wt	LJ08
7	1.2	M	Head	15	CMN	L1	Q61K	wt	
8	1.6	F	Head	4	CMN	M1	NA	wt	ZM07
9	1.9	F	Trunk	18	CMN	L2	NA	wt	SC06
10	3.2	M	Arm	11	CMN	L1	Q61K	wt	
11	3.7	M	Head	12	CMN	L2	wt	wt	
12	7.6	M	Trunk	12	CMN (Pseudo-ME)	L1	NA	V600E	
13	11.8	M	Head	2	CMN	M1	Q61K	wt	
14	18.5	M	Trunk	5	CMN	M1	Q61K	wt	
15	30.3	W	Leg	2.5	CMN	M1	Q61K	wt	
16	74.3	M	Head	7	CMN	M1	Q61K	wt	SW34

NA: not available (due to low quality of DNA). Cultured CMNs are highlighted yellow
ME: melanoma

Table 2. Grade Of Immunoreactivity In Different Nevi Groups, Melanoma And Primary Melanoma Metastases

	CMN		Cong. P.		MN		MN>70 y		M in MN		MN arnd. M		M Meta.	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
MelanA [%]	80.6	11.3	57.5	30.1	49.0	24.2	43.8	19.2	60.0	10.0	30.0	20.0	78.3	18.9
MelanA [grade*%]	192.5	54.5	101.1	83.6	84.0	68.3	103.8	63.2	180.0	30.0	73.3	71.0	190.0	59.4
HMB45 [%]	33.8	21.8	25.6	22.3	42.0	30.4	6.9	13.5	63.3	5.8	6.7	2.9	88.3	7.6
HMB45 [grade*%]	73.1	56.5	30.6	28.1	68.0	60.1	6.9	13.5	190.0	17.3	11.7	7.6	238.3	68.5
MITF [%]	75.0	22.6	88.0	17.9	67.2	35.6	60.0	20.7						
MITF [%]*	200.6	77.8	252.0	78.2	177.2	125.9	166.3	78.9						
Ki67 D [%]	1.2	1.2	0.5	0.5	0.3	0.5	0.0	0.0	8.3	2.9	0.3	0.6	21.7	20.2
Ki67 D [grade*%]	1.7	2.2	0.9	1.0	0.4	0.8	0.0	0.0	15.0	8.7	0.7	1.2	58.3	66.4
p16 D [%]	31.4	17.9	42.5	21.2	14.3	20.0	17.5	17.7	1.0	0.0	40.0	0.0	0.0	0.0
p16 D [grade*%]	78.2	54.8	98.8	77.0	42.0	60.5	35.0	35.4	2.0	0.0	93.3	23.1	0.0	0.0
β-gal D [%]	34.0	19.5	8.0	18.1	20.2	23.1	7.5	11.3						
β-gal D [grade%]	60.0	40.0	31.8	49.0	33.8	44.9	7.5	11.3						
CD271 D[%]	55.3	19.3	54.4	26.1	65.0	12.2	32.5	10.6	66.7	5.8	50.0	10.0	86.7	15.3
CD271 D [grade*%]	136.9	60.7	123.8	92.4	131.4	73.6	65.0	21.2	200.0	17.3	100.0	20.0	260.0	48.8
SOX10 D[%]	82.5	8.6	72.5	14.9	59.0	24.9	35.0	35.4	70.0	26.5	66.7	5.8	56.7	49.3
SOX10 D [grade*%]	223.8	53.5	175.0	61.4	121.1	78.2	70.0	70.7	196.7	102.1	200.0	17.3	113.3	98.7
pERK [%]	10.0	14.1	2.4	2.5	16.3	16.5	1.8	1.9	23.2	25.7	1.0	0.0	65.0	16.6
pERK [grade*%]	23.0	27.1	5.2	5.1	32.5	33.0	4.8	6.0	54.4	60.3	1.6	0.6	163.0	77.8

CMN: Congenital melanocytic nevus. Con. P.: melanocytic nevus with congenital pattern. MN: melanocytic nevus. MN: melanocytic nevus of patients over 70 years. M in MN: melanoma in melanocytic nevus. MN arnd. M: melanocytic nevus around melanoma. M Meta: melanoma metastasis. Grade is calculated by multiplying the percentage of immunoreactive cells with the expression intensity (1 - low, 3 - strong). [%] indicates percentage of immunoreactive cells within the lesion