

**Table S1.** Demographics and characteristics of patients with CM downloaded from TCGA.

Patient Characteristics	Classification	Number of Patients Primary CM (n=102)	Number of Patients Metastatic CM (n=366)
<b>Gender</b>	Male	60 (58.8 %)	228 (62.3%)
	Female	42 (41.2 %)	138 (37.7%)
<b>Age at diagnosis (years)</b>	Median	65	56
<b>Tumor Stage</b>	Stage I	2 (2%)	74 (20.2%)
	Stage II	66 (64.7%)	73 (20.0%)
	Stage III	26 (25.5%)	144 (39.3%)
	Stage IV	3 (2.9%)	21 (5.7%)
	Not reported	5 (4.9%)	54 (14.8%)
<b>BRAF mutations</b>	Detected	43 (42.2%)	142 (38.8%)
	Not detected	59 (57.8%)	224 (61.2%)
<b>NRAS mutations</b>	Detected	10 (9.8%)	88 (24%)
	Not detected	92 (90.2%)	278 (76%)
<b>NF1 mutations</b>	Detected	9 (8.8%)	37 (10.1%)
	Not detected	93 (91.2%)	329 (89.9%)

**Table S2.** Multivariable analysis of *ARL1* expression for overall survival of TCGA melanoma patients

Classification (n)	Mean OS (years)	Standard Error	p-value	Exp(B)	95,0% CI for Exp(B)	
					Lower	Upper
<b>Age</b>	Mean=59	0,005	0,000	1,021	1,010	1,031
<b>Gender</b>	Male (254)	0,159	0,570	1,094	0,802	1,494
	Female (155)					
<b>Tumor Stage</b>	Stage I (79)	0,359	0,000	0,258	0,128	0,522
	Stage II (142)					
	Stage III (165)					
	Stage IV (23)					
<b>Type of tumor</b>	Primary (97)	0,248	0,002	2,143	1,317	3,487
	Metastatic (312)					
<b>BRAF mutations</b>	Mutated (161)	0,173	0,990	1,002	0,714	1,406
	Wildtype (248)					
<b>NRAS mutations</b>	Mutated (87)	0,184	0,411	0,860	0,599	1,233
	Wildtype (322)					
<b>NF1 mutations</b>	Mutated (40)	0,249	0,603	1,139	0,699	1,855
	Wildtype (369)					
<b>ARL1</b>		0,204	0,011	1,676	1,124	2,500
	Low expression (72)	4,8	0,598			
	High expression (337)	11,1	0,738			

**Table S3.** Multivariable analysis of *ARL3* expression for overall survival of TCGA CM patients.

	Classification (n)	Mean OS (years)	Standard Error	<i>p</i> -value	Exp(B)	95,0% CI for Exp(B)	
						Lower	Upper
<b>Age</b>	Mean=59		0,005	0,000	1,021	1,011	1,032
<b>Gender</b>	Male (254)		0,159	0,457	1,126	0,824	1,537
	Female (155)						
<b>Tumor Stage</b>	Stage I (79)		0,357	0,000	0,267	0,132	0,537
	Stage II (142)						
	Stage III (165)						
	Stage IV (23)						
<b>Type of tumor</b>	Primary (97)		0,245	0,001	2,334	1,445	3,760
	Metastatic (312)						
<b>BRAF mutations</b>	Mutated (161)		0,172	0,709	1,066	0,761	1,495
	Wildtype (248)						
<b>NRAS mutations</b>	Mutated (87)		0,184	0,471	0,876	0,611	1,256
	Wildtype (322)						
<b>NF1 mutations</b>	Mutated (40)		0,248	0,388	1,239	0,761	2,016
	Wildtype (369)						
<b>ARL3</b>		0,171		0,030	0,690	0,493	0,965
	Low expression (96)	11,1					
	High expression (313)	7,3					

**Table S4.** Multivariable analysis of *ARL5B* expression for overall survival of TCGA melanoma patients.

	Classification (n)	Mean OS (years)	Standard Error	p-value	Exp(B)	95,0% CI for Exp(B)	
						Lower	Upper
<b>Age</b>	Mean=59		0,005	0,000	1,020	1,010	1,031
<b>Gender</b>	Male (254)		0,159	0,512	1,109	0,813	1,513
	Female (155)						
<b>Tumor Stage</b>	Stage I (79)		0,357	0,000	0,264	0,131	0,532
	Stage II (142)						
	Stage III (165)						
	Stage IV (23)						
<b>Type of tumor</b>	Primary (97)		0,245	0,020	2,160	1,126	4,140
	Metastatic (312)						
<b>BRAF mutations</b>	Mutated (161)		0,172	0,635	1,085	0,774	1,521
	Wildtype (248)						
<b>NRAS mutations</b>	Mutated (87)		0,184	0,534	0,892	0,621	1,280
	Wildtype (322)						
<b>NF1 mutations</b>	Mutated (40)		0,248	0,454	1,204	0,741	1,957
	Wildtype (369)						
<b>ARL5B</b>		0,171	0,598		1,143	0,695	1,880
	Low expression (288)	10,8					
	High expression (121)	8,2					

**Table S5.** Multivariable analysis of *ARL8A* expression for overall survival of TCGA CM patients.

	Classification (n)	Mean OS (years)	Standard Error	<i>p</i> -value	Exp(B)	95,0% CI for Exp(B)	
						Lower	Upper
<b>Age</b>	Mean=59		0,005	0,000	1,021	1,011	1,031
<b>Gender</b>	Male (254)		0,159	0,486	1,117	0,819	1,524
	Female (155)						
<b>Tumor Stage</b>	Stage I (79)		0,358	0,000	0,266	0,132	0,535
	Stage II (142)						
	Stage III (165)						
	Stage IV (23)						
<b>Type of tumor</b>	Primary (97)		0,322	0,048	1,889	1,006	3,548
	Metastatic (312)						
<b>BRAF mutations</b>	Mutated (161)		0,170	0,678	1,073	0,769	1,499
	Wildtype (248)						
<b>NRAS mutations</b>	Mutated (87)		0,185	0,441	0,867	0,604	1,246
	Wildtype (322)						
<b>NF1 mutations</b>	Mutated (40)		0,250	0,372	1,250	0,766	2,041
	Wildtype (369)						
<b>ARL8A</b>		0,331		0,192	0,649	0,340	1,242
	Low expression (65)	4,0					
	High expression (344)	10,6					

**Table S6.** Multivariable analysis of *ARL10* expression for overall survival of TCGA CM patients.

Classification (n)	Mean OS (years)	Standard Error	<i>p</i> -value	Exp(B)	95,0% CI for Exp(B)	
					Lower	Upper
<b>Age</b>	Mean=59	0,005	0,000	1,021	1,011	1,032
<b>Gender</b>	Male (254)	0,159	0,548	1,100	0,806	1,501
	Female (155)					
<b>Tumor Stage</b>	Stage I (79)	0,357	0,000	0,271	0,135	0,547
	Stage II (142)					
	Stage III (165)					
	Stage IV (23)					
<b>Type of tumor</b>	Primary (97)	0,276	0,023	1,875	1,091	3,221
	Metastatic (312)					
<b>BRAF mutations</b>	Mutated (161)	0,172	0,722	1,063	0,759	1,490
	Wildtype (248)					
<b>NRAS mutations</b>	Mutated (87)	0,184	0,490	0,881	0,615	1,262
	Wildtype (322)					
<b>NF1 mutations</b>	Mutated (40)	0,249	0,391	1,238	0,760	2,015
	Wildtype (369)					
<b>ARL10</b>		0,190	0,050	1,452	1,283	2,413
	Low expression (263)	11,4				
	High expression (146)	6,7				

**Table S7.** Multivariable analysis of *ARL11* expression for overall survival of TCGA melanoma patients.

	Classification (n)	Mean OS (years)	Standard Error	<i>p</i> -value	Exp(B)	95,0% CI for Exp(B)	
						Lower	Upper
<b>Age</b>	Mean=59	0,005	0,000	1,020	1,010	1,031	
<b>Gender</b>	Male (254)	0,159	0,519	1,108	0,811		1,513
	Female (155)						
<b>Tumor Stage</b>	Stage I (79)	0,358	0,000	0,267	0,132	0,538	
	Stage II (142)						
	Stage III (165)						
	Stage IV (23)						
<b>Type of tumor</b>	Primary (97)	1,020	0,427	2,248	0,304	16,603	
	Metastatic (312)						
<b>BRAF mutations</b>	Mutated (161)	0,171	0,677	1,074	0,768	1,502	
	Wildtype (248)						
<b>NRAS mutations</b>	Mutated (87)	0,184	0,510	0,866	0,618	1,270	
	Wildtype (322)						
<b>NF1 mutations</b>	Mutated (40)	0,248	0,452	1,205	0,742	1,958	
	Wildtype (369)						
<b>ARL11</b>		1,035	0,936	0,920	0,121	6,995	
	Low expression (95)	2,8					
	High expression (314)	10,7					

**Table S8.** Multivariable analysis of *ARL13A* expression for overall survival of TCGA melanoma patients.

Classification (n)	Mean OS (years)	Standard Error	<i>p</i> -value	Exp(B)	95,0% CI for Exp(B)	
					Lower	Upper
<b>Age</b>	Mean=59	0,005	0,000	1,022	1,011	1,032
<b>Gender</b>	Male (254)	0,159	0,619	1,082	0,792	1,478
	Female (155)					
<b>Tumor Stage</b>	Stage I (79)	0,359	0,000	0,250	0,124	0,506
	Stage II (142)					
	Stage III (165)					
	Stage IV (23)					
<b>Type of tumor</b>	Primary (97)	0,254	0,000	2,561	1,583	4,143
	Metastatic (312)					
<b>BRAF mutations</b>	Mutated (161)	0,172	0,849	1,033	0,738	1,447
	Wildtype (248)					
<b>NRAS mutations</b>	Mutated (87)	0,185	0,427	0,864	0,601	1,241
	Wildtype (322)					
<b>NF1 mutations</b>	Mutated (40)	0,248	0,392	1,237	0,760	2,012
	Wildtype (369)					
<b>ARL13A</b>		0,278	0,029	0,544	0,316	0,938
	Low expression (384)	10,6				
	High expression (25)	5,5				

**Table S9.** Multivariable analysis of *ARL15* expression for overall survival of TCGA melanoma patients.

	Classification (n)	Mean OS (years)	Standard Error	<i>p</i> -value	Exp(B)	95,0% CI for Exp(B)	
						Lower	Upper
<b>Age</b>	Mean=59	0,005	0,000	1,021	1,011	1,032	
<b>Gender</b>	Male (254)	0,159	0,440	1,131	0,828		1,544
	Female (155)						
<b>Tumor Stage</b>	Stage I (79)	0,357	0,000	0,262	0,130	0,528	
	Stage II (142)						
	Stage III (165)						
	Stage IV (23)						
<b>Type of tumor</b>	Primary (97)	0,822	0,001	2,275	1,407	3,680	
	Metastatic (312)						
<b>BRAF mutations</b>	Mutated (161)	0,163	0,713	1,065	0,760	1,494	
	Wildtype (248)						
<b>NRAS mutations</b>	Mutated (87)	0,138	0,452	0,871	0,607	1,249	
	Wildtype (322)						
<b>NF1 mutations</b>	Mutated (40)	0,224	0,368	1,251	0,768	2,037	
	Wildtype (369)						
<b>ARL15</b>		0,494	0,003	0,610	0,443	0,841	
	Low expression (297)	10,3					
	High expression (112)	6,8					

**Table S10.** Multivariable analysis of *ARL16* expression for overall survival of TCGA melanoma patients.

Classification (n)	Mean OS (years)	Standard Error	<i>p</i> -value	Exp(B)	95,0% CI for Exp(B)	
					Lower	Upper
<b>Age</b>	Mean=59	0,005	0,000	1,021	1,011	1,032
<b>Gender</b>	Male (254)	0,159	0,525	1,106	0,810	1,510
	Female (155)					
<b>Tumor Stage</b>	Stage I (79)	0,357	0,000	0,271	0,135	0,546
	Stage II (142)					
	Stage III (165)					
	Stage IV (23)					
<b>Type of tumor</b>	Primary (97)	0,327	0,101	1,709	0,900	3,247
	Metastatic (312)					
<b>BRAF mutations</b>	Mutated (161)	0,171	0,728	1,061	0,759	1,485
	Wildtype (248)					
<b>NRAS mutations</b>	Mutated (87)	0,183	0,501	0,884	0,617	1,266
	Wildtype (322)					
<b>NF1 mutations</b>	Mutated (40)	0,249	0,361	1,256	0,771	2,047
	Wildtype (369)					
<b>ARL16</b>		0,256	0,110	0,665	0,402	1,098
	Low expression (282)	11,2				
	High expression (127)	4,9				

**Table S11.** Correlation between *ARL* genes expression and the infiltration of distinct immune cell subsets, in SKCM, primary and metastatic melanoma samples. Data obtained from the TIMER2.0 resource, including *p*-values and Spearman's rank correlation coefficients (cor) according to different algorithms applied. Only significant correlations were presented in the table.

Gene	Description	Algorithm	SKCM		SKCM - Primary		SKCM - Metastasis	
			cor	<i>p</i> -value	cor	<i>p</i> -value	cor	<i>p</i> -value
<i>ARL1</i>	T cells CD4+ memory	XCELL	0.447	$8.81 \times 10^{-24}$	0.725	$6.76 \times 10^{-18}$	0.3	$8.78 \times 10^{-9}$
	T cells CD4+ Th1	XCELL	-0.577	$5.60 \times 10^{-42}$	-0.601	$2.39 \times 10^{-42}$	-0.568	$1.41 \times 10^{-31}$
	T cells CD4+ Th2	XCELL	0.261	$1.56 \times 10^{-8}$	0.598	$3.11 \times 10^{-11}$	0.098	$6.68 \times 10^{-2}$
	Treg	QUANTISEQ	0.351	$1.06 \times 10^{-14}$	0.458	$1.31 \times 10^{-6}$	0.278	$1.11 \times 10^{-7}$
	Neutrophils	TIMER	0.427	$1.17 \times 10^{-21}$	0.501	$8.17 \times 10^{-8}$	0.349	$1.38 \times 10^{-11}$
	Common lymphoid progenitor	XCELL	0.485	$2.25 \times 10^{-28}$	0.72	$1.53 \times 10^{-17}$	0.411	$7.87 \times 10^{-16}$
<i>ARL2</i>	T cells CD4+ Th1	XCELL	0.369	$3.76 \times 10^{-16}$	0.52	$4.80 \times 10^{-9}$	0.312	$2.04 \times 10^{-9}$
<i>ARL3</i>	T cells CD8+	TIMER	0.231	$5.80 \times 10^{-7}$	0.47	$6.02 \times 10^{-7}$	0.133	$1.25 \times 10^{-2}$
	T cells CD4+ memory	XCELL	0.348	$2.01 \times 10^{-14}$	0.502	$7.86 \times 10^{-8}$	0.263	$5.35 \times 10^{-7}$
	T cells CD4+ Th2	XCELL	0.321	$2.03 \times 10^{-12}$	0.47	$6.29 \times 10^{-7}$	0.243	$3.88 \times 10^{-6}$
	Common lymphoid progenitor	XCELL	0.325	$1.02 \times 10^{-12}$	0.451	$1.96 \times 10^{-6}$	0.287	$3.89 \times 10^{-8}$
<i>ARL4A</i>	Common lymphoid progenitor	XCELL	0.28	$1.05 \times 10^{-9}$	0.433	$5.37 \times 10^{-6}$	0.23	$1.25 \times 10^{-5}$
<i>ARL4C</i>	T cells CD4+ memory	XCELL	0.444	$1.51 \times 10^{-23}$	0.364	$1.43 \times 10^{-4}$	0.384	$7.28 \times 10^{-14}$
	T cells CD4+ Th2	XCELL	0.307	$2.06 \times 10^{-11}$	0.409	$2.01 \times 10^{-5}$	0.22	$3.10 \times 10^{-5}$
	Treg	QUANTISEQ	0.409	$7.43 \times 10^{-20}$	0.363	$1.79 \times 10^{-4}$	0.376	$2.36 \times 10^{-13}$
	Neutrophils	TIMER	0.508	$2.34 \times 10^{-31}$	0.362	$1.87 \times 10^{-4}$	0.517	$1.22 \times 10^{-25}$
	Macrophages M2	CIBERSORT-ABS	0.433	$2.79 \times 10^{-22}$	0.363	$1.80 \times 10^{-4}$	0.407	$1.56 \times 10^{-15}$
	Monocyte	MCP-COUNTER	0.571	$5.77 \times 10^{-41}$	0.321	$1.01 \times 10^{-3}$	0.581	$2.34 \times 10^{-33}$
<i>ARL5A</i>	T cells CD4+	EPIC	0.46	$2.70 \times 10^{-25}$	0.595	$4.09 \times 10^{-11}$	0.421	$1.18 \times 10^{-16}$
	T cells CD4+ memory	XCELL	0.57	$9.75 \times 10^{-41}$	0.603	$1.95 \times 10^{-11}$	0.525	$1.95 \times 10^{-11}$
	T cells CD4+ Th2	XCELL	0.388	$7.87 \times 10^{-18}$	0.459	$1.21 \times 10^{-6}$	0.32	$6.88 \times 10^{-10}$
	Neutrophils	TIMER	0.556	$1.88 \times 10^{-38}$	0.602	$2.25 \times 10^{-11}$	0.508	$1.19 \times 10^{-24}$

		MCP-COUNTER	0.405	$1.93 \times 10^{-19}$	0.568	$4.82 \times 10^{-10}$	0.377	$2.25 \times 10^{-13}$
	Common lymphoid progenitor	XCELL	0.52	$5.02 \times 10^{-33}$	0.657	$6.23 \times 10^{-14}$	0.48	$9.20 \times 10^{-22}$
<i>ARL5B</i>	T cells CD4+	EPIC	0.413	$3.29 \times 10^{-20}$	0.402	$2.78 \times 10^{-05}$	0.418	$2.08 \times 10^{-16}$
	T cells CD4+ memory	XCELL	0.552	$7.11 \times 10^{-38}$	0.679	$4.43 \times 10^{-15}$	0.439	$4.20 \times 10^{-18}$
	T cells CD4+ Th2	XCELL	0.417	$1.12 \times 10^{-20}$	0.557	$1.19 \times 10^{-09}$	0.315	$1.28 \times 10^{-09}$
	Neutrophils	TIMER	0.51	$1.46 \times 10^{-31}$	0.537	$6.01 \times 10^{-09}$	0.447	$8.39 \times 10^{-19}$
		MCP-COUNTER	0.4	$5.99 \times 10^{-19}$	0.395	$4.04 \times 10^{-05}$	0.431	$1.90 \times 10^{-17}$
	Common lymphoid progenitor	XCELL	0.495	$1.16 \times 10^{-29}$	0.644	$2.82 \times 10^{-13}$	0.467	$1.31 \times 10^{-20}$
	T cell NK	XCELL	-0.417	$1.17 \times 10^{-20}$	-0.581	$1.53 \times 10^{-10}$	-0.355	$5.63 \times 10^{-12}$
<i>ARL6</i>	T cells CD4+ memory	XCELL	0.465	$6.03 \times 10^{-26}$	0.679	$4.34 \times 10^{-15}$	0.308	$3.05 \times 10^{-09}$
	T cells CD4+ Th1	XCELL	-0.499	$4.27 \times 10^{-30}$	-0.532	$8.65 \times 10^{-09}$	-0.495	$2.77 \times 10^{-23}$
	T cells CD4+ Th2	XCELL	0.266	$7.76 \times 10^{-09}$	0.525	$1.50 \times 10^{-08}$	0.12	$2.41 \times 10^{-02}$
	Treg	QUANTISEQ	0.385	$1.30 \times 10^{-17}$	0.411	$1.76 \times 10^{-05}$	0.323	$4.85 \times 10^{-10}$
	Neutrophils	TIMER	0.481	$8.67 \times 10^{-28}$	0.519	$2.23 \times 10^{-08}$	0.407	$1.53 \times 10^{-15}$
		MCP-COUNTER	0.422	$3.66 \times 10^{-21}$	0.388	$5.51 \times 10^{-05}$	0.462	$4.22 \times 10^{-20}$
	Common lymphoid progenitor	XCELL	0.577	$6.02 \times 10^{-42}$	0.703	$1.74 \times 10^{-16}$	0.543	$1.67 \times 10^{-28}$
<i>ARL8B</i>	T cell NK	XCELL	-0.419	$6.80 \times 10^{-21}$	-0.554	$1.56 \times 10^{-09}$	-0.365	$1.32 \times 10^{-12}$
	Neutrophils	TIMER	0.435	$1.74 \times 10^{-22}$	0.548	$2.44 \times 10^{-09}$	0.381	$1.15 \times 10^{-13}$
		MCP-COUNTER	0.386	$1.13 \times 10^{-17}$	0.48	$3.23 \times 10^{-07}$	0.365	$1.38 \times 10^{-12}$
	Common lymphoid progenitor	XCELL	0.413	$2.70 \times 10^{-20}$	0.642	$3.74 \times 10^{-13}$	0.337	$7.5 \times 10^{-11}$
<i>ARL11</i>	T cell NK	XCELL	-0.228	$8.43 \times 10^{-07}$	-0.484	$2.61 \times 10^{-07}$	-0.135	$1.12 \times 10^{-02}$
	T cells CD8+	EPIC	0.281	$9.52 \times 10^{-10}$	0.469	$6.68 \times 10^{-07}$	0.229	$1.33 \times 10^{-05}$
		MCP-COUNTER	0.593	$9.16 \times 10^{-45}$	0.373	$1.14 \times 10^{-04}$	0.575	$1.42 \times 10^{-32}$
		QUANTISEQ	0.571	$6.75 \times 10^{-41}$	0.305	$1.81 \times 10^{-03}$	0.565	$3.41 \times 10^{-31}$
		CIBERSORT-ABS	0.576	$9.37 \times 10^{-42}$	0.348	$3.44 \times 10^{-04}$	0.576	$1.18 \times 10^{-32}$
		XCELL	0.489	$7.12 \times 10^{-29}$	0.376	$9.88 \times 10^{-05}$	0.477	$1.81 \times 10^{-21}$
	T cells CD8+ central memory	XCELL	0.572	$5.16 \times 10^{-41}$	0.368	$1.41 \times 10^{-04}$	0.564	$3.83 \times 10^{-31}$
<i>ARL11</i>	T cells CD4+ memory	XCELL	0.602	$2.48 \times 10^{-46}$	0.485	$2.47 \times 10^{-07}$	0.542	$1.87 \times 10^{-28}$
	B cell	QUANTISEQ	0.404	$2.41 \times 10^{-19}$	0.242	$1.44 \times 10^{-02}$	0.341	$4.32 \times 10^{-11}$
		XCELL	0.498	$4.50 \times 10^{-30}$	0.32	$1.05 \times 10^{-03}$	0.434	$1.18 \times 10^{-17}$

	MCP-COUNTER	0.443	$2.46 \times 10^{-23}$	0.334	$6.13 \times 10^{-04}$	0.359	$3.47 \times 10^{-12}$	
<b>Memory B cell</b>	TIMER	0.463	$1.03 \times 10^{-25}$	0.435	$4.79 \times 10^{-06}$	0.387	$4.36 \times 10^{-14}$	
<b>Neutrophil</b>	TIMER	0.697	$8.74 \times 10^{-68}$	0.666	$2.19 \times 10^{-14}$	0.667	$5.93 \times 10^{-47}$	
<b>Macrophage</b>	EPIC	0.551	$1.20 \times 10^{-37}$	0.327	$7.93 \times 10^{-04}$	0.568	$1.33 \times 10^{-31}$	
	XCELL	0.603	$1.58 \times 10^{-46}$	0.412	$1.65 \times 10^{-05}$	0.573	$2.58 \times 10^{-32}$	
<b>Macrophage M1</b>	CIBERSORT-ABS	0.612	$2.28 \times 10^{-48}$	0.472	$5.40 \times 10^{-07}$	0.583	$1.49 \times 10^{-33}$	
	QUANTISEQ	0.462	$1.64 \times 10^{-25}$	0.377	$9.38 \times 10^{-05}$	0.414	$4.44 \times 10^{-16}$	
	XCELL	0.662	$6.25 \times 10^{-59}$	0.486	$2.25 \times 10^{-07}$	0.64	$2.89 \times 10^{-42}$	
<b>Macrophage M2</b>	CIBERSORT-ABS	0.739	$5.21 \times 10^{-80}$	0.692	$8.48 \times 10^{-16}$	0.718	$2.71 \times 10^{-57}$	
	QUANTISEQ	0.517	$1.30 \times 10^{-32}$	0.225	$2.27 \times 10^{-02}$	0.553	$9.55 \times 10^{-30}$	
	TIDE	-0.604	$1.01 \times 10^{-46}$	-0.545	$3.26 \times 10^{-09}$	-0.57	$6.24 \times 10^{-32}$	
<b>Monocyte</b>	MCP-COUNTER	0.842	$4.32 \times 10^{-124}$	0.863	$2.41 \times 10^{-31}$	0.809	$3.06 \times 10^{-83}$	
	XCELL	0.605	$4.92 \times 10^{-47}$	0.37	$1.29 \times 10^{-04}$	0.647	$2.19 \times 10^{-43}$	
<b>Myeloid Dendritic Cell</b>	TIMER	0.514	$3.59 \times 10^{-32}$	0.275	$5.13 \times 10^{-03}$	0.547	$5.82 \times 10^{-29}$	
	XCELL	0.429	$6.58 \times 10^{-22}$	0.305	$1.84 \times 10^{-03}$	0.465	$2.08 \times 10^{-20}$	
	MCP-COUNTER	0.624	$1.29 \times 10^{-50}$	0.49	$1.71 \times 10^{-07}$	0.614	$5.24 \times 10^{-38}$	
<b>Myeloid Dendritic Cell Activated</b>	XCELL	0.612	$2.42 \times 10^{-48}$	0.415	$1.42 \times 10^{-05}$	0.585	$7.72 \times 10^{-34}$	
<b>Plasmacytoid Dendritic Cell</b>	XCELL	0.496	$9.91 \times 10^{-30}$	0.211	$3.36 \times 10^{-02}$	0.519	$7.82 \times 10^{-26}$	
<b>NK cell</b>	MCP-COUNTER	0.546	$8.13 \times 10^{-37}$	0.433	$5.62 \times 10^{-06}$	0.547	$5.52 \times 10^{-29}$	
<b>NK cell Activated</b>	MCP-COUNTER	0.467	$4.14 \times 10^{-26}$	0.454	$1.68 \times 10^{-06}$	0.445	$1.26 \times 10^{-18}$	
<b>T cell follicular helper</b>	CIBERSORT-ABS	0.508	$2.23 \times 10^{-31}$	0.42	$1.14 \times 10^{-05}$	0.515	$2.17 \times 10^{-25}$	
<b>ARL13B</b>	<b>T cells CD4+ memory</b>	XCELL	0.522	$2.68 \times 10^{-33}$	0.662	$3.37 \times 10^{-14}$	0.428	$3.27 \times 10^{-17}$
	<b>T cells CD4+ Th2</b>	XCELL	0.36	$1.92 \times 10^{-15}$	0.534	$7.35 \times 10^{-09}$	0.259	$7.97 \times 10^{-07}$
	<b>Treg</b>	QUANTISEQ	0.463	$1.24 \times 10^{-25}$	0.45	$2.05 \times 10^{-06}$	0.431	$2.04 \times 10^{-17}$
	<b>Neutrophil</b>	MCP-COUNTER	0.449	$4.60 \times 10^{-24}$	0.452	$1.89 \times 10^{-06}$	0.478	$1.21 \times 10^{-21}$
		TIMER	0.545	$9.86 \times 10^{-37}$	0.5	$8.62 \times 10^{-08}$	0.518	$9.65 \times 10^{-26}$
<b>Common lymphoid progenitor</b>	XCELL	0.54	$5.49 \times 10^{-36}$	0.77	$3.23 \times 10^{-21}$	0.471	$6.04 \times 10^{-21}$	

	<b>T cell NK</b>	XCELL	-0.428	$8.81 \times 10^{-22}$	-0.601	$2.44 \times 10^{-11}$	-0.361	$2.29 \times 10^{-12}$
<b><i>ARL15</i></b>	<b>T cell CD4+</b>	EPIC	0.431	$4.43 \times 10^{-22}$	0.542	$4.06 \times 10^{-09}$	0.393	$1.72 \times 10^{-14}$
	<b>T cell CD4+ memory</b>	XCELL	0.419	$7.47 \times 10^{-21}$	0.353	$2.71 \times 10^{-04}$	0.36	$3.01 \times 10^{-12}$
	<b>T cells CD4+ Th1</b>	XCELL	-0.506	$4.26 \times 10^{-31}$	-0.541	$4.20 \times 10^{-09}$	-0.5	$8.59 \times 10^{-24}$
	<b>Tregs</b>	QUANTISEQ	0.392	$3.29 \times 10^{-18}$	0.446	$2.70 \times 10^{-06}$	0.342	$3.70 \times 10^{-11}$
	<b>Neutrophil</b>	TIMER	0.559	$6.21 \times 10^{-39}$	0.6	$2.62 \times 10^{-11}$	0.511	$5.58 \times 10^{-25}$
	<b>Macrophage M2</b>	CIBERSORT- ABS	0.504	$7.57 \times 10^{-31}$	0.409	$1.99 \times 10^{-05}$	0.515	$2.37 \times 10^{-25}$
	<b>Monocytes</b>	QUANTISEQ	0.344	$4.11 \times 10^{-14}$	0.477	$4.02 \times 10^{-07}$	0.339	$5.44 \times 10^{-11}$
	<b>Myeloid Dendritic cell</b>	MCP- COUNTER	0.444	$1.68 \times 10^{-23}$	0.428	$7.14 \times 10^{-06}$	0.403	$2.94 \times 10^{-15}$
	<b>NK cell</b>	QUANTISEQ	0.405	$1.98 \times 10^{-19}$	0.448	$2.37 \times 10^{-06}$	0.424	$7.05 \times 10^{-17}$
	<b>T cell NK</b>	XCELL	-0.383	$1.96 \times 10^{-17}$	-0.541	$4.43 \times 10^{-09}$	-0.31	$2.57 \times 10^{-09}$

**Table S12.** Expression thresholds defined to divide patients into two non-overlapping groups with high or low *ARL* expression

<b>Variables</b>	<b>Threshold</b>
<b><i>ARL1</i></b>	10,72
<b><i>ARL2</i></b>	11.09
<b><i>ARL3</i></b>	9.50
<b><i>ARL4A</i></b>	11.125
<b><i>ARL4C</i></b>	10.43
<b><i>ARL4D</i></b>	10.25
<b><i>ARL5A</i></b>	11.04
<b><i>ARL5B</i></b>	10.03
<b><i>ARL5C</i></b>	1.13
<b><i>ARL6</i></b>	7.44
<b><i>ARL8A</i></b>	10.62
<b><i>ARL8B</i></b>	12.26
<b><i>ARL9</i></b>	4.80
<b><i>ARL10</i></b>	9.57
<b><i>ARL11</i></b>	4.27
<b><i>ARL13A</i></b>	1.70
<b><i>ARL13B</i></b>	8.01
<b><i>ARL14</i></b>	1.29
<b><i>ARL15</i></b>	9.54
<b><i>ARL16</i></b>	9.88
<b><i>ARL17A</i></b>	9.99
<b><i>ARL17B</i></b>	6.75