














Figure S1. The effect of different types of the vaccines on the liver metastases in RLS₄₀-bearing mice. Metastasis inhibition index (MII) in the control (Opti-MEM) and experimental groups was calculated as $MII = ((\text{mean metastasis area}_{\text{control}} - \text{mean metastasis area}_{\text{experiment}}) / \text{mean metastasis area}_{\text{control}}) \times 100\%$. The data were statistically analyzed using Student's *t*-test and are presented as mean \pm S.E.M. Statistical significance: $p \leq 0.05$.

Table S1. Morphometry of RLS₄₀ lymphosarcoma tumor tissue of mice without treatment (control) and after vaccines administration.

Groups	Color code	Unchanged tumor tissue, Vv, %	Inflammatory infiltration, Vv, %	Necrotic changes, Vv, %
Control		88.5±1.9	6.2±1.5	4.8±0.5
DC/L(×1)		n.d.*	n.d.	n.d.
DC/L(×2)		71.8±3.6 [#]	21.6±4.2 [#]	6.6±1.4
DC/ML(×1)		n.d.	n.d.	n.d.
DC/ML(×2)		78±2.1 [#]	13.8±1.8 [#]	9±1.5 [#]
L(×1)		n.d.	n.d.	n.d.
L(×2)		82.9±7.6	9.4±5.3	7.8±2.5
ML(×1)		n.d.	n.d.	n.d.
ML(×2)		84.3±6.3	5.5±2.2	10.2±4.1 [#]
CIMV/L(×1)		n.d.	n.d.	n.d.
CIMV/L(×2)		79.6±1.9 [#]	12.5±2.3 [#]	8±2.7
CIMV/ML(×1)		n.d.	n.d.	n.d.
CIMV/ML(×2)		87.3±2	7.9±1.2	5±0.6

* n.d. – not determined. [#] differences from the control mice were statistically significant at $p \leq 0.05$.

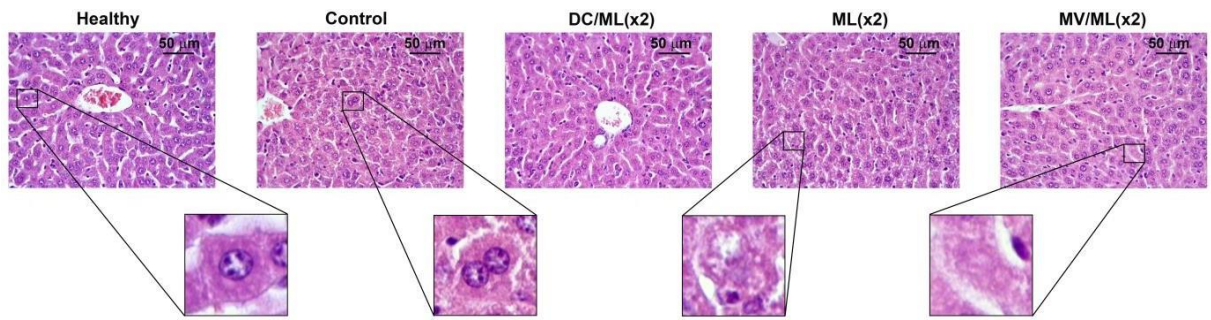
























Figure S2. The effect of vaccines on liver in RLS₄₀-bearing mice. Representative histological images of liver sections. Hematoxylin and eosin staining. Black boxes indicate typical examples of normal hepatocyte, binuclear hepatocyte, dystrophy and necrosis. Magnification $\times 400$.

Table S2. The effect of the vaccines on blood biochemistry of RLS₄₀-bearing mice.

Groups	Color code	ALT, U/L	AST, U/L	ALK, U/L	Total protein, g/L
Healthy		42±1.6	67.3±1.5	68±5.5	55.4±2.1
Control		41.4±1.7	116.2±3.7*	63.1±2.7	49.9±0.9
DC/L(×1)		45.2±5.9	112±11.1*	90.1±25.8	55.4±4.9
DC/L(×2)		36.9±5.1	85.1±3* [#]	117.3±33.5* [#]	55.8±5.4
DC/ML(×1)		39.5±6.7	90.3±5.1* [#]	97.8±6.9* [#]	51.5±4.2
DC/ML(×2)		40.5±4.1	89.5±2.1* [#]	111.5±23.7* [#]	54.4±2.8 [#]
L(×1)		43.5±2.8	93.6±3.2* [#]	110.2±23.7* [#]	56.6±2.7 [#]
L(×2)		38±1.9*	113.6±19.2*	114±22.5* [#]	54.7±4.1
ML(×1)		28.1±4.2* [#]	74.1±3.8* [#]	61.7±6.5	48.5±2.7*
ML(×2)		36±3* [#]	101.7±5.5* [#]	100.7±22.8* [#]	53.5±3.7
CIMV/L(×1)		42.5±5.3	123.4±15.7*	81.4±12.5 [#]	52.4±2.9
CIMV/L(×2)		42.5±5.3	85.5±14.8* [#]	88.6±22.3 [#]	52.4±2.9
CIMV/ML(×1)		34±3* [#]	69.7±7.9 [#]	81.7±15.7 [#]	49.3±4.5
CIMV/ML(×2)		49.8±10.2	91.5±3* [#]	110.5±14.3* [#]	55.4±3 [#]















* statistically significant difference relative to healthy CBA mice, $p \leq 0.05$ [#] statistically significant difference relative to the control RLS₄₀-bearing mice, $p \leq 0.05$

Table S3. Liver morphometry of RLS₄₀ lymphosarcoma-bearing mice without treatment and after vaccines administration.

Groups	Color code	Normal liver parenchyma, Vv, %	Dystrophy, Vv, %	Necrosis, Vv, %	Total destructive changes, Vv, %	Binuclear hepatocytes, Nv
Healthy		76.9±1.5	7.3±0.7	3.1±0.4	10.4±0.9	1.5±0.2
Control		65.8±2.9*	10.4±1.5*	12.9±1.6*	23.3±3*	1.4±0.2
DC/L(×2)		54.2±2.5*#	18±2.2*#	19.9±1*#	37.9±3*#	1.7±0.2
DC/ML(×2)		65.4±1.6*	8±0.6*	15.3±1.1*	23.3±1.7*	1.7±0.8
L(×2)		58.5±2.7*#	11.8±5.2*	22.3±2.6*#	34.1±3.4*#	1.9±0.3
ML(×2)		62.2±5.4*	12±2.7*	17.8±3.4*	29.8±5.9*	1.4±0.5
CIMV/L(×2)		63.6±2.9*	11.4±2.3*	13.9±1.6*	25.2±3.4*	2.5±1.1
CIMV/ML(×2)		66.3±3.3*	12.6±2*	14.4±1.5*	27±2.8*	4.1±0.9*#

* statistically significant difference relative to healthy CBA mice, $p \leq 0.05$ # statistically significant difference relative to RLS₄₀-bearing mice without treatment (control), $p \leq 0.05$

Table S4. Spleen and thymus morphometry of RLS₄₀ lymphosarcoma-bearing mice without treatment (control) and after vaccine administration.

Groups	Color code	Spleen morphometry			Thymus morphometry		
		Red pulp, Vv, %	White pulp, Vv, %	Diameter of follicles, μ m	Cortex, Vv, %	Medulla, Vv, %	C/M index
Healthy		57.3 \pm 3.1	42.6 \pm 1.9	229.9 \pm 13.5	49.9 \pm 1.6	45 \pm 1.9	1.1 \pm 0.1
Control		55.7 \pm 3.5	42.3 \pm 3.3	235.5 \pm 16.5	50.6 \pm 2.3	47.8 \pm 2.4	1.1 \pm 0.1
DC/L(\times 1)		44.8 \pm 2.5 ^{*#}	53.9 \pm 2.5 ^{*#}	197.6 \pm 22.9	78.4 \pm 6.8 ^{*#}	26.8 \pm 1.7 ^{*#}	3 \pm 0.4 ^{*#}
DC/L(\times 2)		33.6 \pm 2.3 ^{*#}	61.4 \pm 3 ^{*#}	313.3 \pm 21.8 ^{*#}	72.8 \pm 1.9 ^{*#}	24 \pm 2.3 ^{*#}	3.2 \pm 0.4 ^{*#}
DC/ML(\times 1)		39.2 \pm 4.1 ^{*#}	60.7 \pm 4.2 ^{*#}	227.6 \pm 9.2	73.8 \pm 3.8 ^{*#}	26.2 \pm 3.8 ^{*#}	3 \pm 0.6 ^{*#}
DC/ML(\times 2)		29 \pm 3.1 ^{*#}	68.8 \pm 3.2 ^{*#}	309.5 \pm 12.4 ^{*#}	68.5 \pm 3.4 ^{*#}	28.1 \pm 3.4 ^{*#}	2.5 \pm 0.4 ^{*#}
L(\times 1)		60.7 \pm 7.6	38.9 \pm 7.6	249.5 \pm 17.9	55.4 \pm 2.6 [*]	43 \pm 3.9	1.4 \pm 0.3
L(\times 2)		39 \pm 2.3 ^{*#}	39.1 \pm 2.3 ^{*#}	271.1 \pm 9.6 ^{*#}	65.1 \pm 2.9 ^{*#}	34.3 \pm 2.5 ^{*#}	1.9 \pm 0.2 ^{*#}
ML(\times 1)		48.6 \pm 4.8 [*]	51.8 \pm 5.6 ^{*#}	209 \pm 7.2 ^{*#}	63.2 \pm 2.5 ^{*#}	36.8 \pm 2.5 ^{*#}	1.7 \pm 0.2 ^{*#}
ML(\times 2)		41.6 \pm 1.6 ^{*#}	54.6 \pm 2 ^{*#}	255 \pm 6.3 ^{*#}	61.4 \pm 7.8 ^{*#}	37.3 \pm 8.4 ^{*#}	1.9 \pm 0.5 ^{*#}
CIMV/L(\times 1)		46.7 \pm 2.9 ^{*#}	52.9 \pm 3.8 ^{*#}	286 \pm 46.3 ^{*#}	78.6 \pm 6.1 ^{*#}	21.4 \pm 1 ^{*#}	7.5 \pm 3.7 ^{*#}
CIMV/L(\times 2)		33.9 \pm 4.3 ^{*#}	62.5 \pm 4.1 ^{*#}	369.8 \pm 9.3 ^{*#}	88.5 \pm 2.6 ^{*#}	9.9 \pm 2.7 ^{*#}	10.3 \pm 2.4 ^{*#}
CIMV/ML(\times 1)		41.5 \pm 4.7 ^{*#}	58.1 \pm 4.8 ^{*#}	289.7 \pm 20.1 ^{*#}	74.2 \pm 3.5 ^{*#}	25.7 \pm 3.6 ^{*#}	3.3 \pm 0.7 ^{*#}
CIMV/ML(\times 2)		27 \pm 3.9 ^{*#}	71 \pm 4.2 ^{*#}	321 \pm 32.1 ^{*#}	85.4 \pm 5.4 ^{*#}	13.5 \pm 5 ^{*#}	13 \pm 4.6 ^{*#}

* Statistically significant difference relative to healthy CBA mice, $p \leq 0.05$. # Statistically significant difference relative to RLS₄₀-bearing mice without treatment, $p \leq 0.05$