

Electronic Supporting Information

Post Translational Modification-Assisted Cancer Immunotherapy for Effective Breast Cancer Treatment

Shevanuja Theivendran, Jie Tang, Chang Lei, Yannan Yang, Hao Song, Zhengying Gu, Yue Wang, Yang Yang, Lei Jin, Chengzhong Yu.

Material and Methods

Material:

Cetyl trimethylammonium bromide (CTAB), sodium salicylate (NaSal), tetraethyl orthosilicate (TEOS), triethanolamine (TEA), titanium (IV) chloride (TiCl_4), Dopamine hydrochloride, tris(hydroxymethyl)aminomethane and doxorubicin (DOX) were purchased from Sigma-Aldrich. PD-L1, CD86, MHC I, MHC II, CD4, CD8, CD11c, and F4/80 antibodies were purchased from Biolegend. All chemicals were used as received without purification. Immunoprecipitation kit was purchased from abcam.

Synthesis of Dendritic mesoporous silica nanoparticles (DMSN)

DMSNs were synthesized following a reported procedure¹. A typical synthesis of DMSNs was performed as follows. At first, 0.070 g of TEA were added to 25 ml of water and stirred gently at 80 °C in a water bath under a magnetic stirring for 0.5 h. Thereafter, 380 mg CTAB and 168 mg NaSal was added to the above solution and kept stirring for another 1h. Then, a mixture of 4 ml TEOS and 0.5 ml of ethanol were added to the water-CTAB-NaSal-TEA solution with gentle stirring (~ 300 rpm) for 2.5 h. The products were collected by high speed centrifugation and washed several times with ethanol to remove the residual reactants, followed by drying in vacuum at

room temperature overnight. The final products were obtained after calcination at 550 °C for 5 h.

Synthesis of Titanium modified dendritic mesoporous silica nanoparticles (TiDMSN)

TiDMSN was synthesized following a reported procedure with modifications². Briefly, 30 mg of DA·HCl was dissolved in 50 mL of Tris buffer (10 mM, pH 8.5) by 5 min ultrasonication, and then 50 mg of DMSN was added and sonicated for another 5 min. The above solution was transferred into a 100 mL flask and stirred for 12 h at 30 °C. The products were collected by centrifugation, washed with water several times and dried in vacuum oven (The product is labelled as PDA-DMSN). Finally, the PDA-DMSN were incubated in TiCl₄ solution (75 mM) for 2 h to immobilize Ti⁴⁺ cations. The products were washed with deionized water.

Preparation of fluorescent labelled nanoparticles: IR-780 iodide dye post modification on the nanoparticles was performed following a reported procedure.³ In short, IR780 (300 mg) was dissolved in 10 mL of anhydrous DMF in a round-bottom flask. Triethylamine (200 μL) and 12-aminododecanoic acid (254 mg) were added and the solution was heated for 3 hours at 85°C under a nitrogen environment. NHS (20 mg) was dissolved in 1 mL of acid-conjugated dye solution in DMF (30 mg/mL), after which EDC (60 mg) dissolved in 400 μL of 25 mM MES buffer, pH 6.5, was added to the dye solution. After 15 minutes of stirring, 50 μL of APTES was added to this solution, and the reaction proceeded for ~2 hours. 4 mg of nanoparticles were mixed with the 250 μL of above APTMS conjugated dye solution and diluted to 1 mL with DI water and stirred for 1 day at room temperature. The particles were collected by centrifugation and washed with water.

Characterization: Transmission electron microscopy (TEM) images were obtained with a JEOL 1010 operated at 100 kV. SEM images were obtained using JEOL JSM 7001 field-emission SEM (FE-SEM) operated at 15 kV. EDS mapping was conducted from JEOL 2100 operated at 200 kV. Nitrogen adsorption–desorption isotherms were measured at 77 K using a Micromeritics ASAP Tristar II 3020 system. The samples were degassed at 393 K overnight on a vacuum line. The pore size distribution curve was derived from the adsorption branch of the isotherms using the Barrett–Joyner–Halanda (BJH) method. The Brunauer–Emmett–Teller (BET) method was utilized to calculate the specific surface areas. The total pore volume was calculated from the amount adsorbed at a maximum relative pressure (P/P_0) of 0.99. Mass spectrometry was performed on Orbitrap Elite with ETD. X-ray photoelectron spectra (XPS) were collected on a Kratos Axis Ultra X-ray photoelectron spectrometer (PerkinElmer). Dynamic light scattering (DLS) and Zeta potential were carried out at 25 °C using a Zetasizer Nano-ZS from Malvern Instruments. TGA measurement was performed on TGA/DSC 1 (Mettler-Toledo AG) at a heating rate of 2 °C min⁻¹ under an air flow of 20 ml min⁻¹. Live imaging of animals was performed using IVIS Lumina X5 Imaging system.

Cell viability Test: The HEK cell viability of the TiDMSN and DMSN were determined by the MTT colorimetric assay. Cells (8000 per well) were seeded in a flat bottomed 96-well plate and incubated at 37 °C and in 5% CO₂. Cells were exposed to nanoparticles in a dose dependent manner for 24 h. Following treatment completion, cells were incubated with MTT reagent (20 µL/well volume from 5 mg/ml solution in PBS) for 4 h at 37 °C. Then 200 µL of dimethyl sulfoxide (DMSO) was added to each well and mixed to dissolve the formazan crystal. The optical density

(OD) was recorded at 570 nm in a microplate reader and the percentage of residual cell viability was determined.

Antigen enrichment analysis: 4T1 cells were seeded in a 100 mm petri dish at a density of 1.5×10^6 and incubated for 24 h at 37 °C and 5% CO₂. Then, the cell culture media was supplemented with 1× Halt Protease, and Phosphatase Inhibitor Cocktail (ThermoFisher Scientific) and Dox was added at a concentration of 10 µg/ml and incubated for 6-8 h. Then the cell culture media was collected and centrifuged at 13000 RPM for 20 min. The supernatant was collected and stored at -20 °C until further analysis. For preparing tumor lysates without Dox treatment, 4T1 cells were collected and frozen at -80 °C and thawed at room temperature. Then the supernatant was collected by centrifugation at 13000 RPM for 20 mins and stored in -20 °C until further analysis. The concentration of proteins in the tumor lysates collected in the previous step was analyzed by Pierce Coomassie (Bradford) Protein Assay (Thermo Fisher) and diluted to 10 µg/ml prior to the adsorption experiment and stored at 4 °C until use. In a typical enrichment test, 0.5 mg of nanoparticle was mixed with 1 mL of the above solution using vortex mixer and incubated at 4 °C in a rotatory mixer for at least 4 h. In the next step, the particles were collected by centrifugation and the supernatant was saved and stored in ice for subsequent protein quantification. The proteins bound to the nanoparticles were eluted using ACN for 20 min at room temperature. The ACN supernatant was collected by centrifugation. The collected supernatant was processed for the subsequent mass spectrometry analysis on Orbitrap Elite with ETD following the filter assisted sample preparation (FASP) reported previously.⁴

Identification of TA: Raw data files were processed using Proteome Discoverer (PD) version 2 (Thermo Scientific). Peak lists were searched against a Reviewed Mouse Uniprot database

(downloaded in 2018) using Sequest. The parameters used to identify tryptic peptides for the protein identification were a 50 ppm precursor-ion mass tolerance, 0.15 Da product-ion mass tolerance, up to two missed trypsin cleavage sites, carbamidomethyl set as static modification and the oxidation, deamidated, acetyl and phosphorylation set as a dynamic modification. The Percolator node within PD was used to calculate the peptide false discovery rates (FDR), and a 5% FDR was used to filter all the results. The proteins identified with ≥ 2 peptides were reported. The data obtained after the database search was further scrutinized for the presence of previously reported tumor antigens based on literature. Data-independent acquisition (DIA) based sequential window acquisition of all theoretical mass spectra (SWATH-MS) analysis was used for the calculation of relative abundance of proteins based on peak area and the abundance relative to total protein abundance in a sample.

Antigen enrichment for *in vitro* and *ex vivo* experiments: The tumor lysates are prepared as per the description above. Various concentrations of nanoparticles are incubated with 0.5 mL of tumor lysates and incubated at 4 °C for at least 4 h. The supernatants were collected for analysis with BCA kit. Then, the nanoparticles were collected by centrifugation and washed with distilled water once and re-suspended in saline at required concentrations.

Immunoaffinity separation of MHC Class I bound peptides: The MHC class I molecules were isolated and the associated peptides extracted as previously described⁵. RAW cells seeded in five 150 mm dishes at the seeding density of 5×10^6 in DMEM media supplemented with 10% FBS, 100 U/ml penicillin, and 100 mg/ml streptomycin (Gibco®, Life technologies). Antigen enriched TiDMSN was added to each dish and incubated for 20 h. Before lysis, all cells were washed twice with PBS. Cells were lysed for 20min on ice in 20mM Tris-HCl (pH 8), 150mM NaCl, 1% (w/v)

CHAPS, 0.2mM PMSF, 1× Halt Protease, and Phosphatase Inhibitor Cocktail (ThermoFisher Scientific) supplemented with complete Protease Inhibitor Cocktail (abcam). Abcam immunoprecipitation kit (ab206996) was used for further processing. The lysate was subjected to centrifugation (30 min, 13200 RPM at 4 °C) and the resulting supernatant was pre-cleared for 30min using normal rabbit serum and Protein A/G Sepharose beads. For MHC-1 immunoprecipitations, the pre-cleared lysate was incubated with the H-2Ld/H-2Db, H-2kb coupled to Protein A/G Sepharose beads for 5 h at 4 °C. After immunoprecipitation, the beads were washed with TBS (pH 7.4) and peptides were eluted from the purified MHC molecules using 100 mM glycine/HCl. Eluted peptides were further purified with a 10 kDa molecular weight cut-off size filter and de-salted on C18-based STAGE tips. Finally, analyzed with Liquid Chromatography with tandem mass spectrometry (LC MS/MS).

Ex vivo maturation of APCs: Spleens from naïve mice were passed through a cell strainer to obtain single cell suspension, and red blood cells were lysed using erylysis buffer (Sigma–Aldrich). The resulting cells were seeded in a 12-well plate at a density of 2×10^5 cells/well in DMEM media supplemented with 10% FBS, 100 U/ml penicillin, and 100 mg/ml streptomycin (Gibco®, Life technologies). PBS, different antigen enriched nanoparticle formulations were added at a concentration of 25 µg/ml to the wells and incubated for 24 h. The cells were recovered from the plate and incubated with Fc-block for 20 min at 4 °C, centrifuged and resuspended in a buffer containing CD11c, F4/80, CD86, MHC Class I and MHC Class II (BioLegend) antibodies for 30 min at 4 °C. The cells were then centrifuged and resuspended in 0.5 mL of FACS buffer (PBS, 0.02% sodium azide, 0.5% BSA) and analyzed using LSR II flow cytometer (BD Biosciences).

In vitro cytokine secretion measurement: The RAW 264.7 macrophages were seeded in 12 well plate at a density of 2×10^5 cells/well. For measuring IL-1 β and IL-6, the cells were pre-treated with lipopolysaccharide (LPS, 25 ng/ml) for 3 h before exposure to $100 \mu\text{g mL}^{-1}$ nanoparticles for 6 h and the supernatant were collected before analysed by ELISA.

In vitro endosomal escape study: Tumor lysate protein solution was labelled with FITC following a reported procedure⁶. In short, 25 μL of fluorochrome dissolved in dimethyl sulfoxide (3mg/ml) was added to 1 ml of protein solution and incubated for 1h at 4 °C. FITC labelled protein solution was washed with distilled water many times using Millipore 3kDa centrifuge columns as per manufacturer's instructions. FITC labelled protein solution was then incubated with nanoparticles for the subsequent enrichment. The antigen enriched nanoparticles were washed with distilled water and resuspended in distilled water at a certain concentration. Raw cells were seeded in a 12 well plate at a seeding density of 2×10^5 per well. After 24 h, the medium is replaced with fresh media and FITC labelled antigen enriched nanoparticles were added at a concentration of 25 $\mu\text{g/ml}$ and further incubated for another 6H. Cells were washed twice with PBS and incubated with LysoTracker Red as per manufacturer's instructions for 0.5 h, then washed with PBS twice, fixed with Paraformaldehyde (4%), stained with DAPI, and observed under CLSM using 405 nm, 488 nm, and 680 nm lasers.

In vivo experiment details: For xenograft bilateral tumor model, 2×10^6 4T1 cells were suspended in PBS and subcutaneously injected in the right flank of BALB/c mice on day -7 (primary tumors) and 4×10^5 4T1 cells were subcutaneously injected in the left flank on day -5 (distant tumors). The right-flank tumors (primary tumors) were intratumorally injected with different formulations (25 mg/kg of nanoparticles, 2.5 mg/kg of DOX) on days 0, 2 and 4. The

checkpoint blockade PD-L1 antibody (2.5 mg/kg) were intraperitoneally injected into the animals on days 1, 3 and 5. The mice were euthanized on day 12 according to the institutional animal ethics. The distant tumors were collected to analyze the infiltration of T cells. Blood was collected from each group to measure the IFN- γ in the serum using the enzyme-linked immunosorbent assay (ELISA). Distant tumor samples were also collected, weighed, washed with PBS, fixed in the 4% paraformaldehyde and sectioned for H&E, TUNEL, CD8, CD4, and TNF- α staining. Other major organs, including heart, liver, spleen, and kidneys were also harvested, fixed in 4% paraformaldehyde, sectioned, and stained with H&E for evaluating the metastasis and toxicity of the nanoformulation. The tumor volume (V) was calculated using $V=L \times W^2/2$, where W is the tumor width dimension and L the tumor long dimension.

In vivo CTL infiltration test: Distant tumors were harvested on days 12 post-tumor inoculation for a flow cytometric analysis of the *in vivo* experiments. The tumors were homogenized to produce single cell suspension. The cells were washed twice in PBS plus 1 % BSA by centrifugation at 1200 RPM for 5 min. The resuspended cell pellet was treated with 1 mL of red blood cells (RBCs) lysis buffer for 5 min to lyse RBCs. The reaction was stopped by adding RPMI 1640 supplemented with 10% FBS, and the cells were washed twice in PBS plus 1 % BSA. Trypan blue was applied for live/dead cell discrimination during cell counting. Before the surface staining, the samples were incubated with Fc Block for 10 min on ice, followed by surface staining with anti-mouse CD3, CD8 and CD4 on ice for 20 min. Wash again with PBS and analyse in flow cytometry.

In vivo spleen maturation test: Spleens were harvested on days 12 post-tumor inoculation for a flow cytometric analysis of the *in vivo* experiments. Single-cell suspensions were prepared via passing through a cell strainer. The cells were washed twice in PBS plus 1 % BSA by centrifugation

at 1200 RPM for 5 min. The resuspended cell pellet was treated with 1 mL of red blood cells (RBCs) lysis buffer for 5 min to lyse RBCs. The reaction was stopped by adding PBS, and the cells were washed twice in PBS plus 1 % BSA. Trypan blue was applied for live/dead cell discrimination during cell counting. Before the surface staining, the samples were incubated with Fc Block for 10 min on ice, followed by surface staining with anti-mouse CD11c, F4/80 and CD86 on ice for 20 min. Wash again with PBS and analyze in flow cytometry.

Intratumoral nanoparticle content: In a bilateral tumor model, PBS or different nanoparticle formulations at the dosage of 25 mg/kg were intratumorally injected into the primary tumor. After 4 days, the primary and distant tumors were collected, cut into small pieces and dissolved in concentrated nitric acid. The silicon contents in each tissue were quantified by ICP-OES and calculated based on the injection dose and weight of tissues. The final values were obtained by subtracting the silicon contents in the control groups.

Ingenuity pathway analysis: The selected genes were analyzed using Ingenuity Pathway Analysis software. Pathways and Diseases and Disorders, which were predicted to be influenced by the differentially enriched proteins by TiDMSN and DMSN, were ranked in order of significance.

In vivo live imaging and immune cell mediated delivery of fluorescent labelled nanoparticles: 2×10^6 4T1 cells were suspended in PBS and subcutaneously injected in the right flank of BALB/c mice. On day 7, fluorescent labelled nanoparticles mixed with Dox (25 mg/kg of nanoparticles, 2.5 mg/kg of DOX) were injected intratumorally and imaged in a time dependent manner using IVIS Lumina X5 Imaging system. Tumors and proximal lymph nodes were collected on day 5 and the single cell suspensions were analyzed using flow cytometry.

In vivo CRT exposure measurement: 2×10^6 4T1 cells were suspended in PBS and subcutaneously injected in the right flank of BALB/c mice. On day 7, nanoparticles mixed with Dox (25 mg/kg of nanoparticles, 2.5 mg/kg of DOX) were injected. Tumors were collected and the single cell suspensions were analyzed using flow cytometry 24 h post injection.

Live subject statement: This study was performed in strict accordance with the Animal Care and Protection Act (2001, Queensland, Australia) and was approved by the Institutional Animal Ethics Committee of University of Queensland Biological Resources (UQBR, Australia).

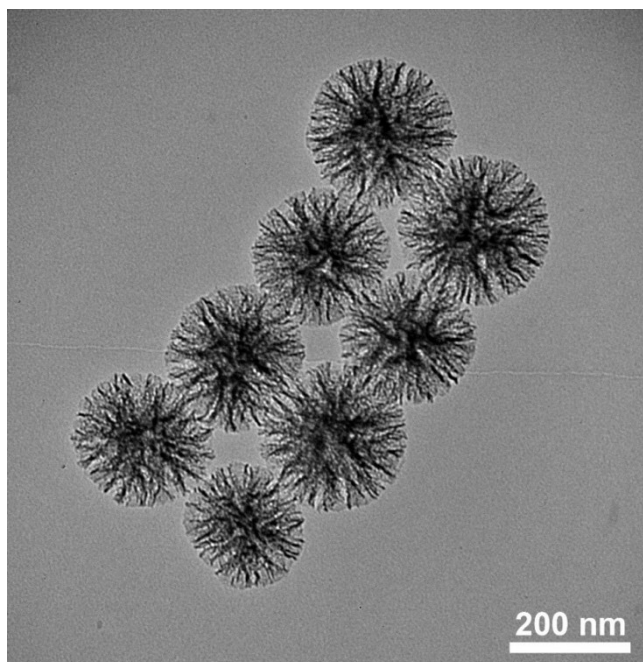


Fig. S1: TEM image of DMSN

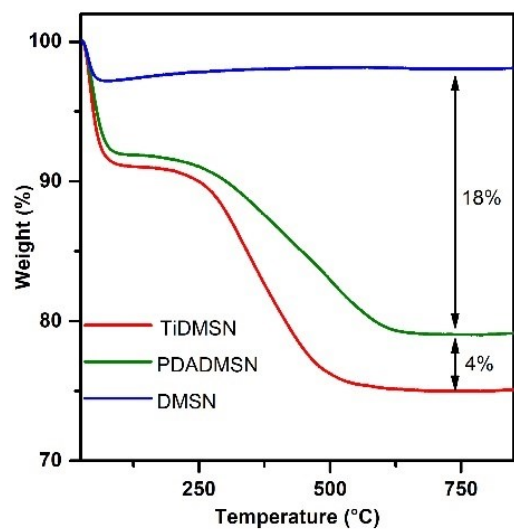


Fig. S2: Thermogravimetric analysis of different nanoparticle formulations.

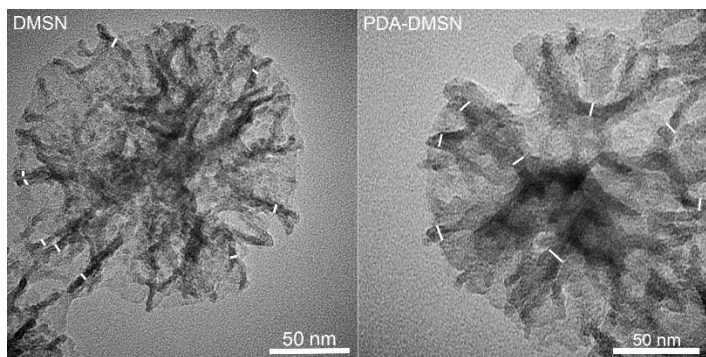


Fig. S3: High magnification TEM images of DMSN and PDADMSN.

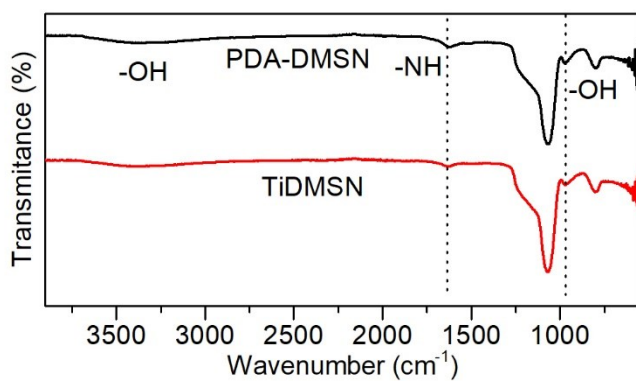


Fig. S4: ATR-FTIR of TiDMSN and PDA-DMSN.

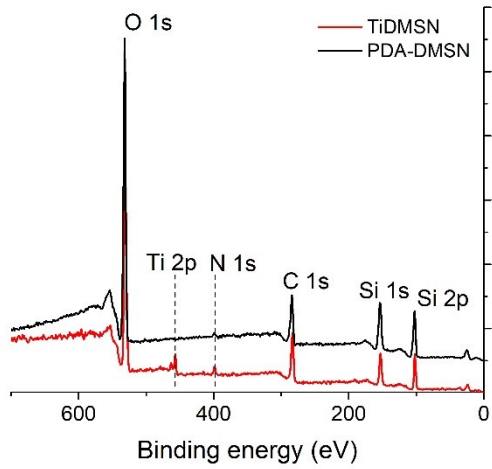


Fig. S5: XPS of TiDMSN and PDA-DMSN

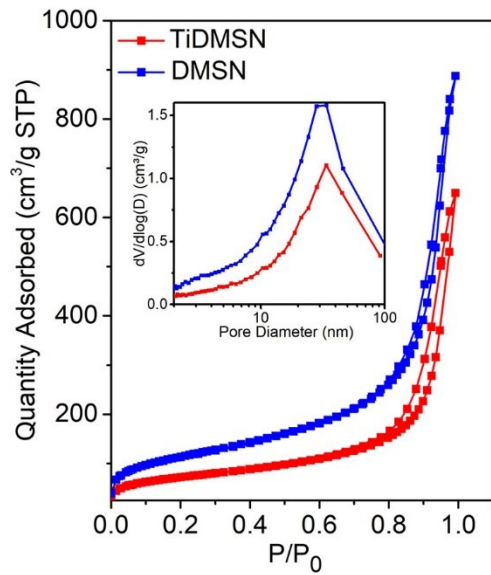


Fig. S6: Nitrogen sorption isotherms and pore size distribution curves of TiDMSN and DMSN.

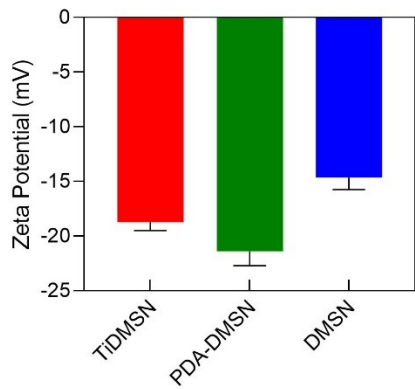


Fig. S7: The zeta potential for TiDMSN, PDA-DMSN and DMSN at pH 7.

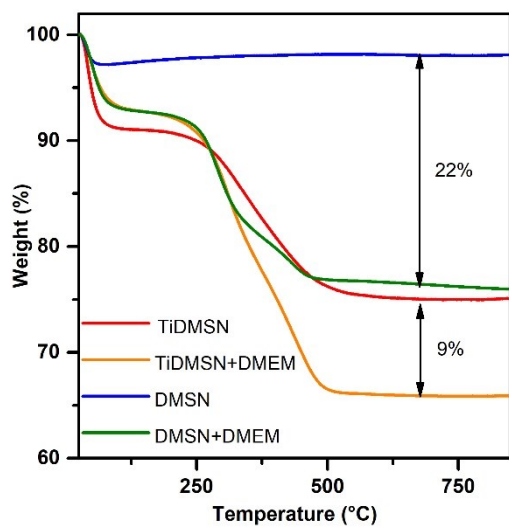


Fig. S8: Thermogravimetric analysis of as-prepared nanoparticles and after incubation in DMEM+FBS.

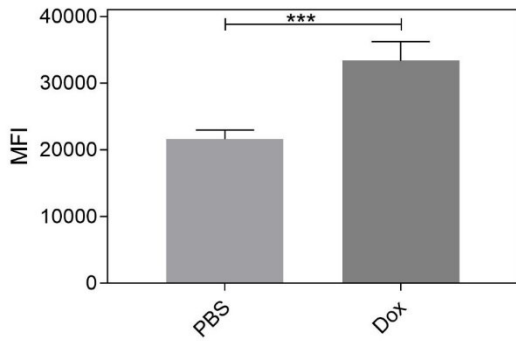


Fig. S9: *In vitro* quantitative analysis of CRT exposure level using flow cytometry.

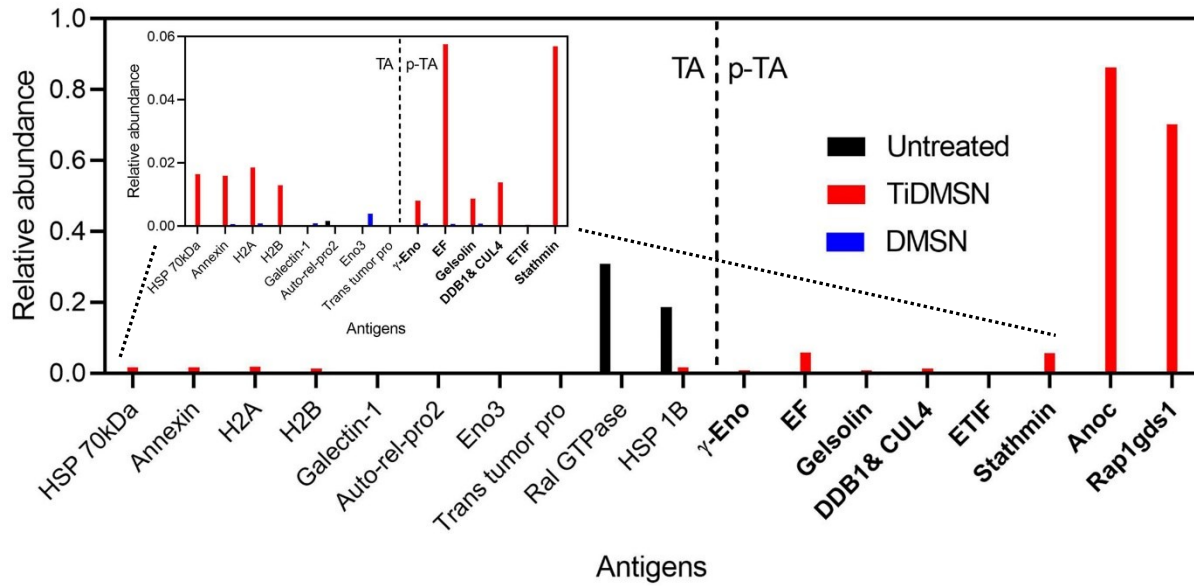


Fig. S10: Relative abundance of TA and p-TA enriched by different nanoparticle formulation.

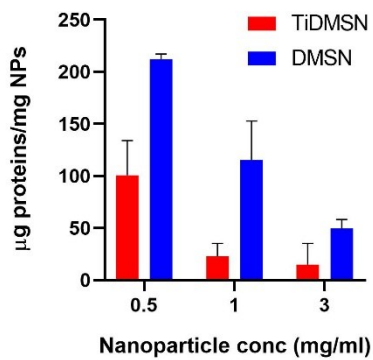


Fig. S11: Protein adsorption capacity at different nanoparticle concentrations of TiDMSN and DMSN.

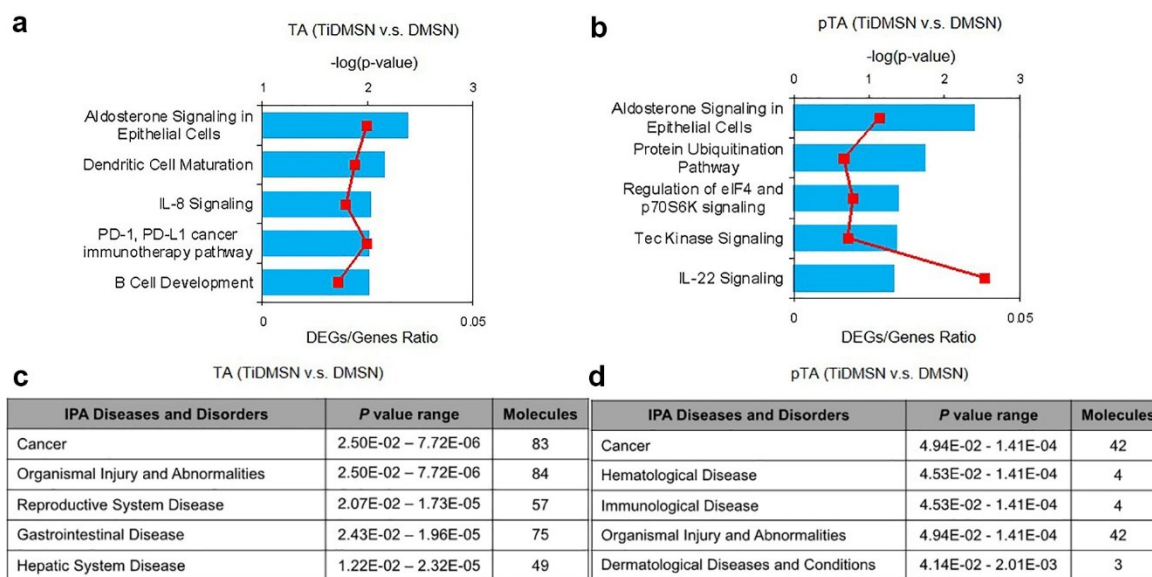


Fig. S12: Top five pathways (a,b) and table summarizing the top five related diseases and disorders (c,d) identified from the proteomics data of TA and p-TA enriched by TiDMSN and DMSN using IPA. DEGs: differentially expressed genes.

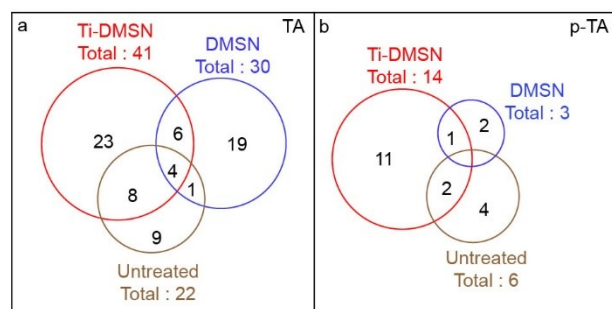


Fig. S13: Number of TA (a) and phosphorylated TA (b) enriched by different nanoparticle formulations without the ICD induction.

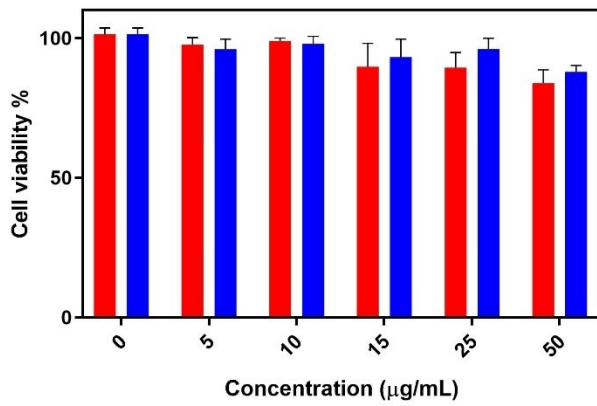


Fig. S14: RAW cell viability after 24 h treatment of TiDMSN and DMSN at various concentrations

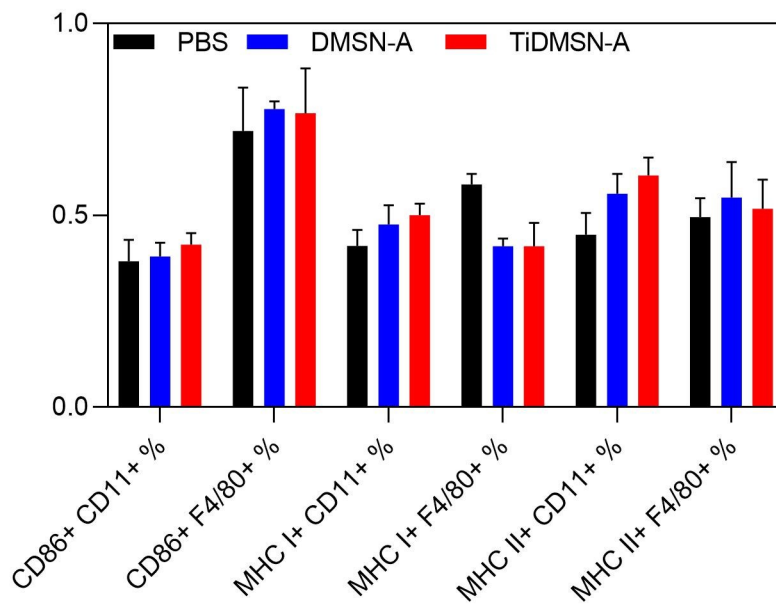


Fig. S15: Flow cytometry analysis of CD 86, MHC Class I and MHC Class II expression on splenocytes treated with PBS or different nanoparticle formulations before antigen enrichment. Macrophages were marked by F4/80 antibody and the dendritic cells were marked by CD 11c antibody.

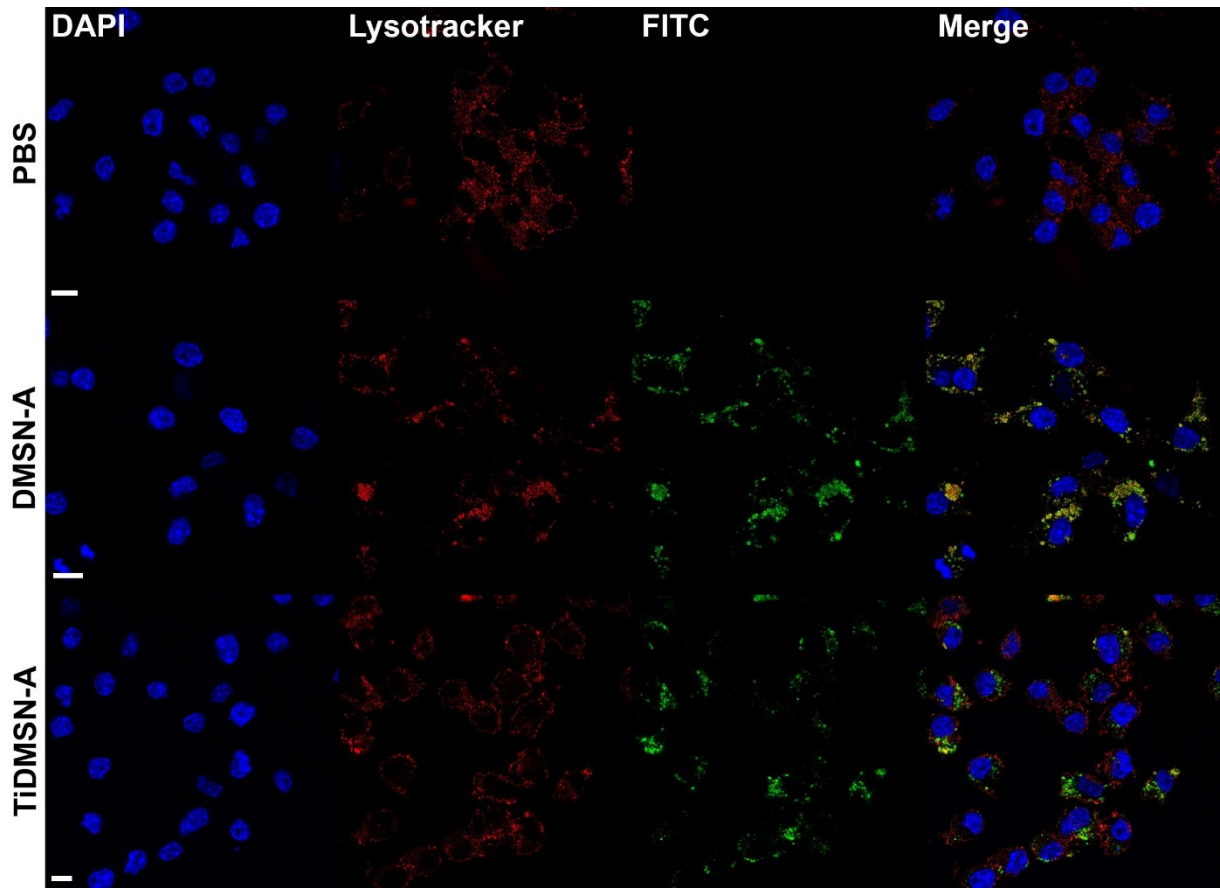


Fig. S16: CLSM images for analyzing the endosomal escape of the antigen enriched nanoparticles.

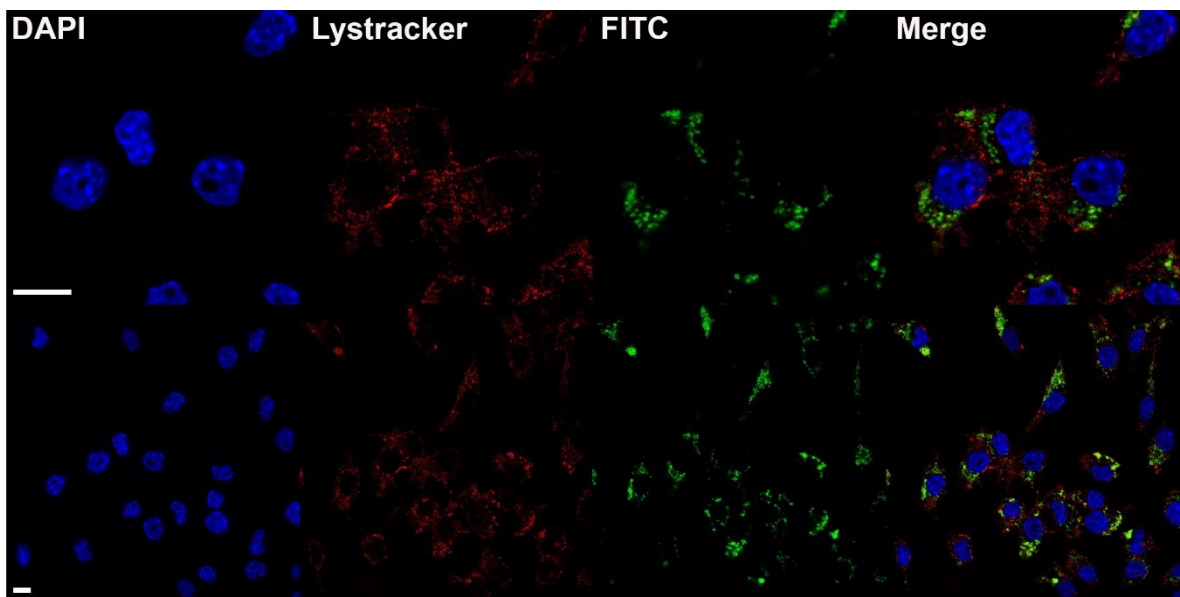


Fig. S17: CLSM images for the endosomal escape of the antigen enriched PDA-DMSN-A.

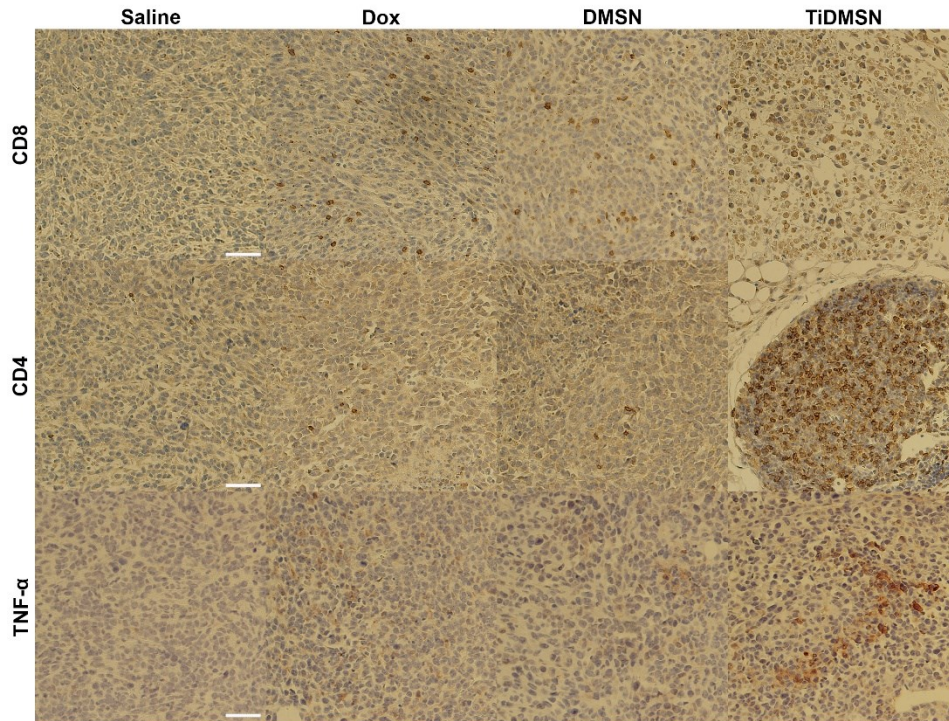


Fig. S18: Immunohistochemistry staining for CD8, CD4 and TNF- α expression (labelled with DAB brown) in the secondary tumor site. Scale: 50 μ m.

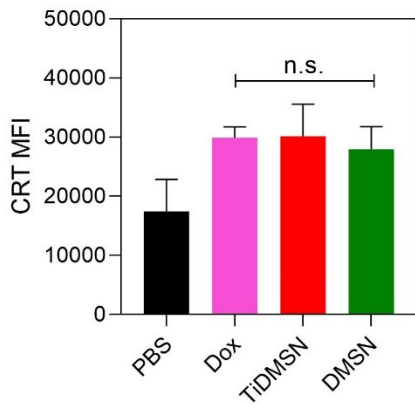


Fig. S19: *In vivo* CRT exposure measurement using flow cytometry

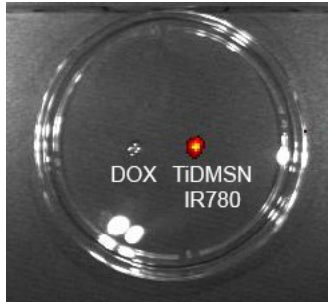


Fig. S20: Characterization of fluorescence emitted from Dox and IR-780 conjugated TiDMSN excited at 710 nm using IVIS imaging system.

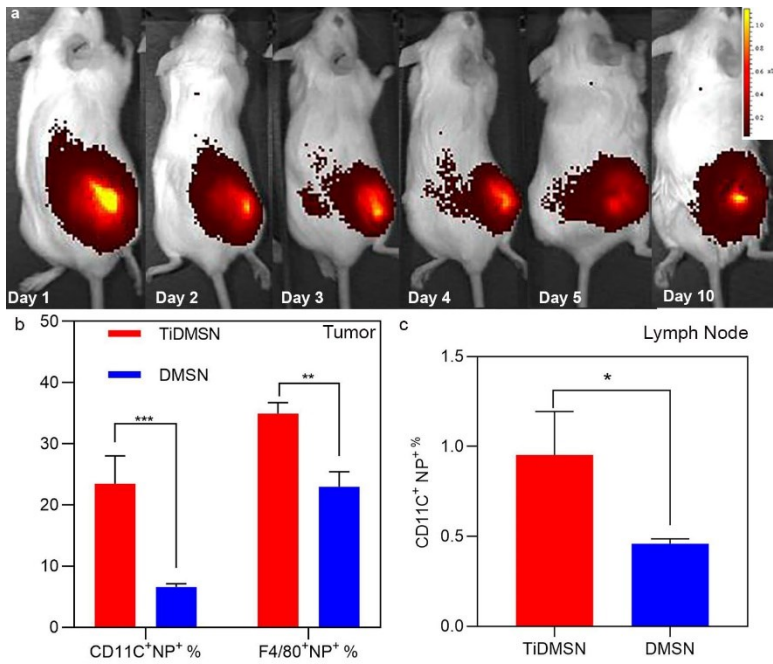


Fig. S21: Time dependent live imaging of fluorescent labelled nanoparticles for TiDMSN injected mice (a). Flow cytometric analysis for the percentage of immune cells with fluorescent labelled nanoparticles in tumor site (b) and proximal lymph nodes (c).

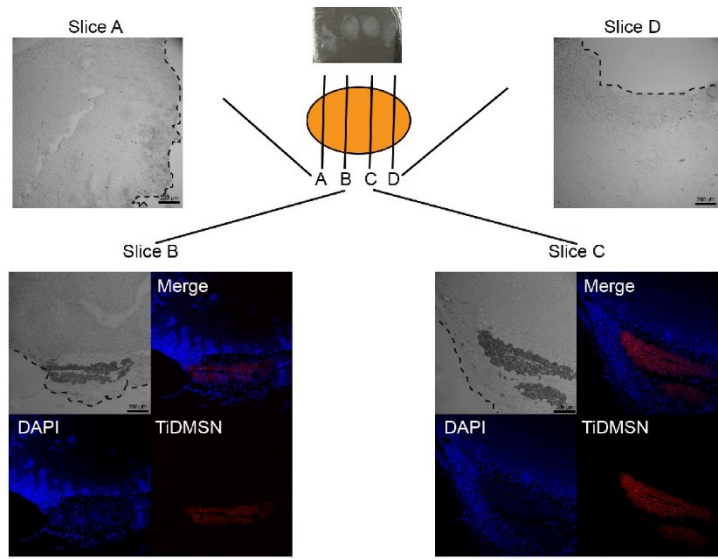
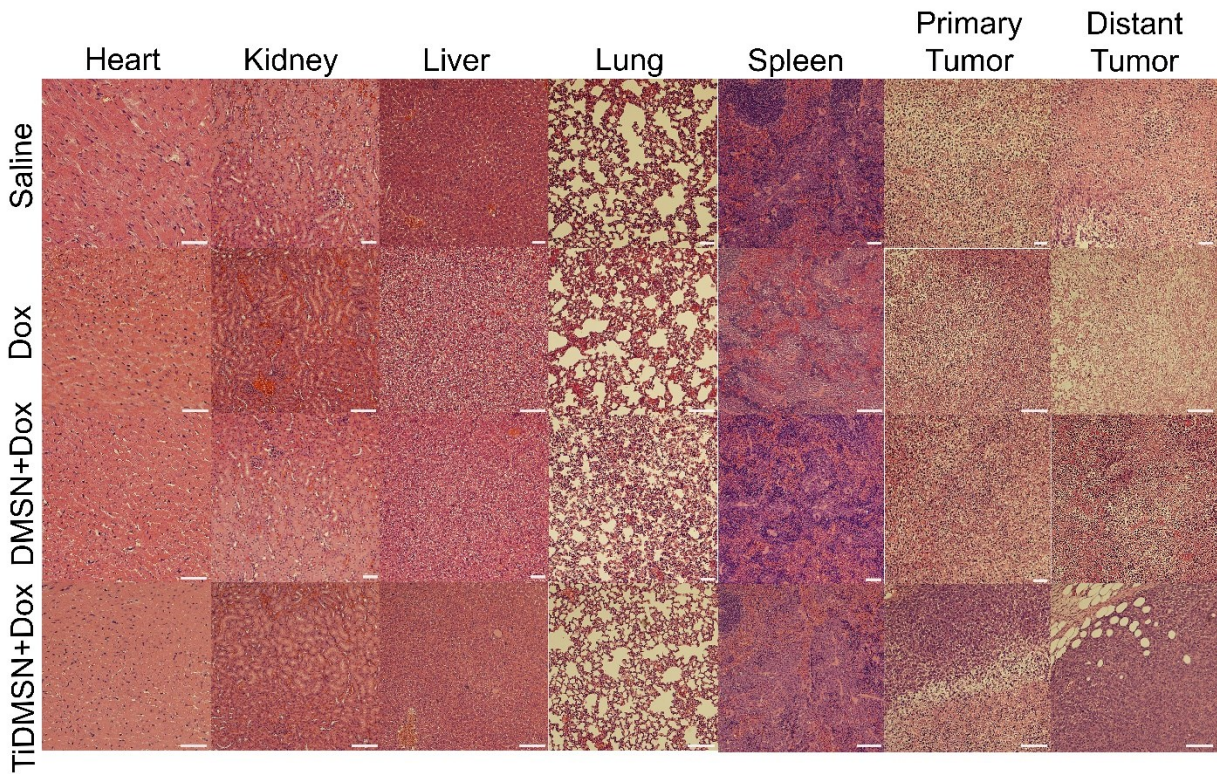


Fig. S22: CLSM characterization for tumor site distribution of fluorescent labelled nanoparticles. The whole tumor was sliced and sectioned at four positions, namely Slice A-D and nanoparticles were found in Slice



B and Slice C. Scale: 200 μ m; Tissue boundaries are marked by dashed lines.

Fig. S23: H & E staining of major organs and tumor tissues collected from the mice treated with Dox, DMSN+Dox and TiDMSN+Dox. Scale bar: 50 μm

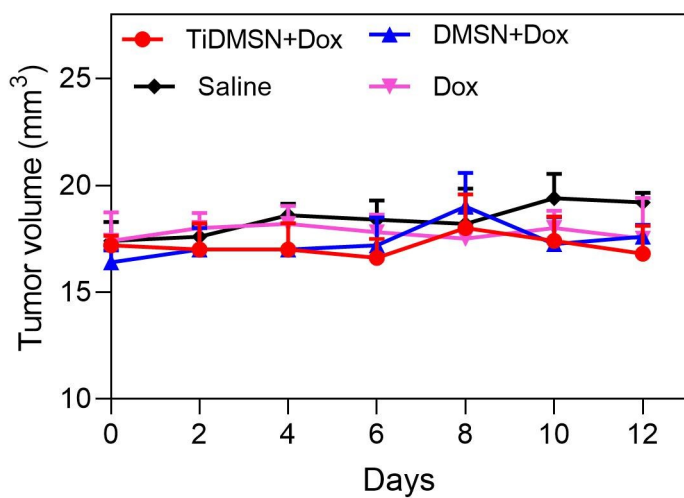


Fig. S24: Body weight measurement of the mice treated with different formulations.

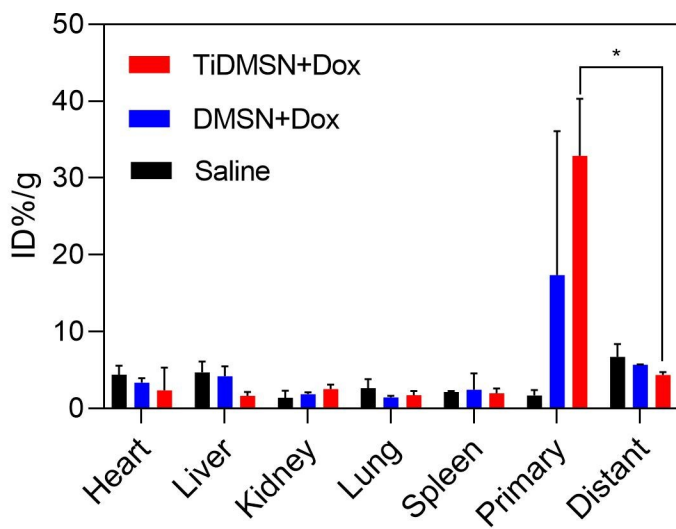


Fig. S25: Biodistribution of Si content from different nanoparticle formulation in heart, liver, kidney, lung, spleen, primary and distant tumor after 4 days of intratumoral injection.

Table S1: Detailed structural properties of nanoparticle formulations. N₂ sorption and ICP analysis of the nanoparticles.

Sample	D (nm)	S_{BET} (m²/g)	V_p (cm³/g)	d_p (nm)	Ti Content (μg/mg)
TiDMSN	280	249.7	1.0	33.6	10.6
DMSN	280	400.2	1.37	33.8	-

Note: D is the particle size estimated from the TEM images; S_{BET} is the BET surface area; V_p is the total pore volume; and d_p is the pore size calculated from the adsorption branch using the BJH method.

Table S2: Detailed information of the TA (including p-TA) enriched by different nanoparticle formulations.

Control	TiDMSN	DMSN
Galectin-related protein	Hsp90 co-chaperone Cdc37-like	Histone H4
Autophagy-related protein 2	1	Hsp90 co-chaperone
homolog A	Rho guanine nucleotide	Ski oncogene
Histone H1	exchange factor 19	Tumor suppressor candidate
Mucin 16	Protein PRRC2A	gene 1
Rho GTPase-activating protein	SH3 and PX domain-containing	Heat shock protein 105 kDa
10	protein 2A	Breast carcinoma-amplified
Death ligand signal enhancer	Eukaryotic translation initiation	sequence 1
Rho guanine nucleotide	factor 3	Death effector domain-
exchange factor 5	T-complex protein 1	containing protein
Apoptosis-stimulating of p53	DEAD (Asp-Glu-Ala-Asp) box	Ras and Rab interactor 3
protein	polypeptide 23	Rab11 family-interacting
Eukaryotic translation initiation	cDNA FLJ52075	protein 2
factor 2B	Ras-related protein Rab-26	Eukaryotic translation initiation
Tudor domain-containing	Elongation of very long chain	factor 2B
protein 1	fatty acids protein 4	Autophagy-related protein 2
Death-inducer obliterator 1	Rho GTPase-activating protein	homolog B
Splicing factor	10	Carcinoembryonic antigen-
Cell death activator	Microtubule-associated protein	related cell adhesion molecule
Histone H2A	2	13
High mobility group protein B2	SH3 domain and	SH2 domain-containing protein
eIF4GI protein	tetratricopeptide repeats 1	4A
Nischarin	Eukaryotic translation initiation	Galectin-3-
Phosphoinositide phospholipase	factor 2B	Ras association domain-
C	Multidrug resistance protein 1B	containing protein 10
Teneurin-1	Heat shock 70 kDa protein	RIKEN cDNA C030048B08
Hypoxia up-regulated protein 1	Rho-related BTB domain-	Death-inducer obliterator 1
Astrotactin-2	containing protein 1	Microtubule-associated tumor
	Histocompatibility 2, class II	suppressor candidate 2
	antigen E beta2	Rho guanine nucleotide
	Rab GTPase-activating protein 1	exchange factor 12
	Serologically defined colon	TNF receptor-associated factor
	cancer antigen 3	6
	DnaJ (Hsp40) homolog	Rab40b, member RAS oncogene
	Annexin	family
	MHC class II H2-M alpha chain	SR-related CTD-associated
	Fasciculation and elongation	factor 4
	protein zeta	Splicing factor 3b
	Translation elongation factor	DnaJ (Hsp40)
	Soluble interferon-gamma	Tumor protein D54
	receptor	Mucin 16
	Ras GTPase-activating-like	Tudor domain-containing
	protein	protein 3
	Interferon-stimulated 20 kDa	Tet oncogene 2

	<p>Stat5a protein Heat shock transcription factor 1 gammaalpha Histone H1 Rab11 family-interacting protein Death-inducer obliterator 1 Proto-oncogene tyrosine-protein kinase Breast carcinoma-amplified sequence 1 Elongation of very long chain fatty acids SR-related CTD-associated factor 4 Ras-related GTP-binding protein A Hypoxia up-regulated protein 1 Ras association domain-containing protein 2 SH3 and multiple ankyrin repeat domains protein 2 Rab9 effector protein with kelch motifs cAMP-responsive element modulator Tumor protein D54 Rho GTPase activating protein 24 Heat shock protein 105 kDa Interleukin-1 receptor-associated kinase Apoptotic chromatin condensation inducer 1 Apoptosis-inducing factor 2 Germinal-center-associated nuclear protein Maestro heat-like repeat-containing protein family member SAGA-associated factor 29 DEAD (Asp-Glu-Ala-Asp) box polypeptide 43 Nischarin CASP8-associated protein 2 Rab40b, member RAS oncogene family DNA repair and recombination</p>	<p>Homeobox protein Phosphoinositide phospholipase C Filensin Protein NPAT Astrotactin-2 Nischarin Semaphorin-6A</p>
--	---	--

	<p> protein RAD54B HMG box transcription factor Ras-related protein Rab-7L1 Vasopressin V1a receptor RAB39, member RAS oncogene family CPN10-like protein Autophagy-related protein 2 Breast cancer 2 Killer cell lectin-like receptor subfamily E Tudor domain-containing protein 3 Metastasis-associated in colon cancer 1 cDNA FLJ34039 Pre-mRNA-splicing factor 38B Splicing factor 3b Galectin-3-binding protein eIF-2-alpha kinase Leucine-rich glioma-inactivated protein 1 Leukocyte-associated immunoglobulin-like receptor 1 Calcium permeable stress-gated cation channel 1 Cep290 protein DNA topoisomerase 2-binding protein 1 Transcriptional enhancer factor TEF Mitogen-activated protein kinase-binding protein 1 NADH dehydrogenase Gag protein Anoctamin-7 Phosphoinositide phospholipase C Ras and Rab interactor 1 Smage-3 protein Teneurin-1 Matrilin-2 TBC1 domain family member 17 FAS-associated factor 2 Tanc1 protein Vinculin Protein NPAT Semaphorin-6A </p>	
--	---	--

	Cullin-7 Stathmin-4 Filensin Exportin-2 Astrotactin-2	
--	---	--

Table S3: Detailed information of the p-TA enriched by different nanoparticle formulations.

Control	TiDMSN	DMSN
Rho GTPase-activating protein 10 Death ligand signal enhancer Eukaryotic translation initiation factor 2B Proto-oncogene tyrosine-protein kinase	Hsp90 co-chaperone Cdc37-like 1 RAB39, member RAS oncogene family Rho guanine nucleotide exchange factor 19 Protein PRRC2A SH3 and PX domain-containing protein 2A Eukaryotic translation initiation factor 3 DEAD (Asp-Glu-Ala-Asp) box polypeptide 23 Ras-related protein Rab-26 Elongation of very long chain fatty acids protein 4 Rho GTPase-activating protein 10 SH3 domain and tetratricopeptide repeats 1 Eukaryotic translation initiation factor 2B Heat shock 70 kDa protein Rho-related BTB domain-containing protein 1 Interferon-stimulated 20 kDa Stat5a protein Heat shock transcription factor 1 gammaalpha Rab11 family-interacting protein Proto-oncogene tyrosine-protein kinase Breast carcinoma-amplified sequence 1 Elongation of very long chain fatty acids	Hsp90 co-chaperone Rab11 family-interacting protein 2 Eukaryotic translation initiation factor 2B Ras association domain-containing protein 10 Heat shock protein 105 kDa Death-inducer obliterator 1 Microtubule-associated tumor suppressor candidate 2 Splicing factor 3b DnaJ Ras and Rab interactor 3 Tumor protein D54 Tet oncogene 2

	Ras-related GTP-binding protein A Rab9 effector protein with kelch motifs Tumor protein D54 Heat shock protein 105 kDa Apoptotic chromatin condensation inducer 1 Germinal-center-associated nuclear protein SAGA-associated factor 29 CASP8-associated protein 2 Rab40b, member RAS oncogene family HMG box transcription factor CPN10-like protein Breast cancer 2 Killer cell lectin-like receptor subfamily E Metastasis-associated in colon cancer 1 Splicing factor 3b Leucine-rich glioma-inactivated protein 1 Leukocyte-associated immunoglobulin-like 1 Calcium permeable stress- 1 DNA topoisomerase 2-binding protein 1 Transcriptional enhancer factor TEF Mitogen-activated protein kinase-binding protein 1 Anoctamin-7 Ras and Rab interactor 1 Smage-3 protein Matrilin-2 TBC1 domain family member 17 FAS-associated factor 2 Cullin-7	
--	--	--

Table S4: Detailed information of the self-proteins enriched by different nanoparticle formulations.

Control	TiDMSN	DMSN
Zinc finger protein Heterogeneous nuclear	Alpha-fetoprotein Nxt2 protein	Telomerase-binding protein ELAV-like protein

<p>ribonucleoprotein E3 ubiquitin-protein Brefeldin A-inhibited guanine nucleotide-exchange protein 3 Synaptotagmin-like protein 4 Myosin Double homeobox family member 3 Histone lysine demethylase HEAT repeat-containing 1 Serine-protein kinase ATM Phosphatidylinositol-glycan biosynthesis class W protein Homeobox protein Solute carrier family 28 member 3 Leucine-rich repeat-containing protein 43 Phosphoinositide 3-kinase regulatory subunit 4 Microtubule-associated serine/threonine-protein kinase 4 Neprilysin Polyadenylate-binding protein-interacting protein 1 Adenosine deaminase-like protein Exocyst complex component 3-like protein 4 Armadillo repeat-containing protein 8 PR domain-containing protein 11 Protein PRRC1 Sperm-associated antigen 1 Fibroblast growth factor receptor-like 1 Podocan Small G protein signaling modulator 1 Bardet-Biedl syndrome 5 protein PDZ domain-containing 2 Catenin beta-1 Dynein heavy chain domain 1 F-box and WD-40 domain protein 27</p>	<p>Heterogeneous nuclear ribonucleoprotein Myosin Early endosome antigen MORC family CW-type zinc finger protein Zinc finger protein Nipped-B-like protein NEDD4-binding protein Basal body-orientation factor Tetratricopeptide repeat protein Actin-related protein Fer-1-like protein AT-rich interactive domain-containing protein Sperm flagellar protein ADP-ribosylation factor GTPase-activating protein ELAV-like protein Stonin Crystallin beta-gamma domain-containing Retinal degeneration 3-like Synaptotagmin-like protein Coiled-coil domain-containing protein Kinesin-like protein BAH and coiled-coil domain-containing protein Capsid protein Sodium/myo-inositol cotransporter Cytoskeleton-associated protein Protein HIRA Golgi apparatus protein Mitochondrial assembly of ribosomal large subunit protein Semaphorin Urocortin Coiled-coil and C2 domain-containing protein Protein furry homolog ATP-binding cassette protein Phosphorylated adapter RNA export protein Lmb145-cap1-243 protein Pre-B-cell leukemia</p>	<p>Pleckstrin homology domain-containing family A member 7 Collagen alpha-1(VII) chain Envelope surface protein SU subunit Protein unc-13 homolog IgM heavy chain variable region MAPK/MAK/MRK overlapping kinase Vesicle-trafficking protein SEC22c 3-phosphoinositide-dependent protein kinase 1 BAH and coiled-coil domain-containing protein Nuclear valosin-containing protein-like BCL-6 corepressor Cyclin-L2 Proline-rich AKT1 substrate 1 Protein phosphatase 1, regulatory subunit 9A CREB-regulated transcription coactivator 3 Zinc finger and BTB domain containing Zinc finger protein Tetraspanin-14 Coiled-coil domain-containing protein Netrin-G2 Cullin-4A ADP-ribosylation factor GTPase-activating protein Tle2 protein Nephrocystin-3 Interferon-gamma-inducible GTPase Ifgga3 protein Insulin-induced gene 2 protein Arf-GAP with GTPase, ANK repeat and PH domain-containing protein Calpain-9 ASL1/AK132805 fusion protein Nipped-B-like protein Phosphatidylinositol-glycan biosynthesis class W protein Microtubule-associated protein</p>
---	--	---

<p>Low-density lipoprotein receptor-related protein 11</p> <p>Tight junction protein</p> <p>StAR-related lipid transfer protein 9</p> <p>Junctophilin-1</p> <p>GTP-binding protein REM 2</p> <p>Alpha-mannosidase</p> <p>Centrosomal protein</p> <p>Replicase polyprotein</p> <p>KIBRA</p> <p>Spnb3 protein</p> <p>Pltp protein</p> <p>Synaptonemal complex protein 2</p> <p>Myh7 protein</p> <p>MyoD family inhibitor domain-containing protein</p> <p>Bromodomain-containing protein</p> <p>Cardiac-enriched FHL2-interacting protein</p> <p>Twinfilin-2</p> <p>Ectoderm-neural cortex protein 1</p> <p>Pard3 protein</p> <p>FRAS1-related extracellular matrix protein 1</p> <p>Anillin</p> <p>Four and a half LIM domains protein 5</p> <p>TATA box-binding protein-like protein 1</p> <p>Epiplakin</p> <p>Cartilage acidic protein 1</p> <p>Cilia- and flagella-associated protein</p> <p>Coiled-coil domain-containing protein</p> <p>Kinetochore-associated protein 1</p> <p>Alpha-2-HS-glycoprotein</p> <p>MAM domain-containing glycosylphosphatidylinositol anchor protein 1</p> <p>Cytoplasmic phosphatidylinositol transfer protein 1</p>	<p>transcription factor</p> <p>Anillin</p> <p>Nostrin</p> <p>Septin</p> <p>DNA topoisomerase 2-binding protein</p> <p>WD repeat and FYVE domain-containing protein</p> <p>Dihydropyrimidinase-related protein</p> <p>NCK-interacting protein with SH3 domain</p> <p>Zinc transporter</p> <p>Uveal autoantigen with coiled-coil domains and ankyrin repeats</p> <p>28S ribosomal protein</p> <p>Pleckstrin homology domain-containing family A member 7</p> <p>Complement component</p> <p>RNA-binding protein</p> <p>Forkhead box</p> <p>G-protein coupled receptor</p> <p>Nuclear receptor coactivator</p> <p>Sacs protein</p> <p>Alpha-actinin-4</p> <p>Chromodomain helicase DNA-binding protein</p> <p>Vacuolar protein</p> <p>Prickle planar cell polarity protein</p> <p>Cat eye syndrome critical region protein</p> <p>Protein ABHD8</p> <p>G patch domain and ankyrin repeat-containing protein</p> <p>Obscurin</p> <p>Clathrin heavy chain</p> <p>Laminin subunit alpha-1</p> <p>Armadillo repeat-containing</p> <p>Protocadherin</p> <p>Hyaluronan and proteoglycan link protein</p> <p>Centrosomal protein</p> <p>Serine/arginine repetitive matrix protein</p> <p>ATP-binding cassette sub-family A member 5</p>	<p>Cpn2 protein</p> <p>Microsomal triglyceride transfer protein</p> <p>Muscleblind-like protein</p> <p>NHL repeat containing 2</p> <p>Vasorin</p> <p>Plectin</p> <p>Hephaestin-like protein</p> <p>NACHT, LRR and PYD domains-containing protein</p> <p>Myosin</p> <p>Heterogeneous nuclear ribonucleoprotein</p> <p>Copine-1</p> <p>Paternally-expressed gene 3 protein</p> <p>Transforming growth factor beta-1-induced transcript 1 protein</p> <p>Myelin P2 protein</p> <p>Serine/arginine repetitive matrix protein</p> <p>Cation channel sperm-associated protein</p> <p>WD repeat and coiled-coil-containing protein</p> <p>Kin of IRRE-like protein</p> <p>AP2-interacting clathrin-endocytosis protein</p> <p>Calcium-binding and coiled-coil domain-containing protein</p> <p>Kinesin-like protein</p> <p>Vacuolar protein sorting-associated protein</p> <p>TROVE domain family, member 2</p> <p>WW domain-containing adapter protein with coiled-coil</p> <p>Protein unc-13 homolog D</p> <p>Baz2b protein</p> <p>Supervillin</p> <p>AAM-B protein</p> <p>ELAV-like protein</p> <p>Apolipoprotein L</p> <p>CUGBP Elav-like family member 2</p> <p>Centrosome-associated protein</p> <p>Protein broad-minded</p>
---	---	---

<p>Glutamate-rich protein 6 Dedicator of cytokinesis protein 6 Trichohyalin-like protein 1 Syt13 protein BCL-6 corepressor-like protein 1 Mitoguardin 1 Cuedc1 protein Vesicular integral-membrane protein Retinoic acid receptor responder protein 2 CLIP-associating protein 1 HEPACAM family member 2 Ciliary rootlet coiled-coil, rootletin family member 2 Kinetochore protein Echinoderm microtubule-associated protein-like 6 Stonin-1 Cullin-4B SHC SH2 domain-binding protein 1 Tektin 1 Tetraspanin Multidrug and toxin extrusion protein 1 Collagen alpha-1(XXVII) chain Sarm1 protein Smoothelin Vacuolar protein sorting-associated protein VTA1 homolog Vertnin Angiopoietin-related protein 7 Nucleoprotein Protocadherin Fat 2 Vertnin Arhgap4 protein Plexin-A4 Caskin1 protein RNA-binding motif protein 6 Nucleoredoxin-like protein 1 Titin Nlrp4e protein Ankyrin-3 Period circadian protein homolog 1</p>	<p>Protein Spindly DNA repair protein Sp100 protein Titin Sterile alpha motif domain-containing protein Ecotropic viral integration site 5 protein Protein BRICK1 Protein YIPF Kelch-like protein BTB/POZ domain-containing protein Tight junction protein Deoxynucleotidyltransferase terminal-interacting protein Ataxin-7-like protein Keratin Sorting nexin Dixin Low affinity immunoglobulin epsilon Fc receptor Spermatogenesis-associated protein Bptf protein DNA excision repair protein 39S ribosomal protein Epiplakin Tripartite motif-containing protein CLIP-associating protein Ccdc19 protein MKIAA0137 protein Formin-binding protein Protein FAM135A Myomesin Oxysterol-binding protein Seipin Protein Wnt-4 Cystic fibrosis transmembrane conductance regulator Hyaluronan mediated motility receptor Exocyst complex component Cytochrome b-c1 complex subunit T cell receptor beta, constant 2 Ubiquitin-40S ribosomal protein</p>	<p>Major sperm fibrous sheath protein Tensin-4 IQ motif and SEC7 domain-containing protein Leucine-rich repeat and guanylate kinase domain-containing protein Ribosomal protein L3-like Ankyrin repeat and EF-hand domain-containing protein 1 Guanine nucleotide-binding protein Protein Wnt-4 Kinesin-like protein Leucine-rich glioma-inactivated protein Semaphorin-4D X-linked retinitis pigmentosa GTPase regulator Kinesin-like protein KIF26A PH and SEC7 domain-containing protein Rnasen protein Protein transport protein Gamma-aminobutyric acid receptor subunit rho-1 Tjp1 protein COMM domain-containing protein Acrosomal protein KIAA1210 Centrosomal protein GRB2-related adaptor protein 2 Sclerostin domain-containing protein 1 Echinoderm microtubule-associated protein-like Uroplakin-1b Armadillo repeat-containing protein Pol protein Midasin Transmembrane and coiled-coil domain-containing protein Gria3 protein Cell division cycle protein Interleukin 1 receptor accessory protein-like</p>
--	--	---

<p>Desmoglein-2 Nucleolar GTP-binding protein 2 Desmoglein-2 Alpha-2-antiplasmin Angiopoietin-related protein 7 Agrin Zinc finger ZZ-type and EF-hand domain-containing protein 1 Fibroblast growth factor 12 Nucleolar protein 12 rRNA-processing protein GRB2-associated-binding protein 3 CLIP-associating protein 1 Tribbles homolog 2 Septin-9 Myo1d protein Thyroglobulin Vitamin D-binding protein Smad nuclear-interacting protein 1 Spatacsin JmjC domain-containing protein 5 Nipped-B-like protein Ankycorbin AP2-interacting clathrin-endocytosis protein Ccdc34 protein Nucleoredoxin-like protein 1 Nuclear pore complex protein Ninjurin 1 Cryptochrome-2 TATA box-binding protein WD repeat-containing protein 37 Caspase recruitment domain-containing protein 14 Protocadherin Upf2 protein Calpain-9 Secernin-1 MAX gene-associated protein Plakophilin-4 Transcription factor SOX-14 Leucine-rich repeat and guanylate kinase domain-containing protein</p>	<p>GRB2-related adaptor protein Protein polybromo-1 F-actin-uncapping protein Protein DENND6A Max-interacting protein A kinase (PRKA) anchor protein PMS1 homolog 1 Zinc finger BED domain-containing protein Neuronal apoptosis inhibitory protein ELKS/Rab6-interacting/CAST family member 1 Netrin StAR-related lipid transfer protein MKIAA1261 protein Centriolar coiled-coil protein Disabled homolog 2-interacting protein Tsnaxip1 protein Protein C9orf135 Acidic fibroblast growth factor intracellular-binding protein Protein Niban Gasdermin Peptidylprolyl isomerase domain and WD repeat-containing protein Vang-like protein Amphoterin-induced protein Ankyrin Nuclear fragile X mental retardation-interacting protein Exportin TOG array regulator of axonemal microtubules protein Filensin Hephaestin-like protein Dickkopf-related protein Peroxidasin homolog AI848100 protein Ube1l Protein max ASL1/Sycp1 fusion protein Apolipoprotein Taste receptor cell protein Cilia and flagella-associated</p>	<p>T-complex protein G1/S-specific cyclin-E1 GAS2-like protein Ifit2 protein Abi3bp protein RNA-binding Raly-like protein RNA-binding protein Rho-related BTB domain-containing protein Ankyrin repeat, SAM and basic leucine zipper domain-containing protein Serine/threonine-protein kinase Capping protein, Arp2/3 and myosin-I linker protein Golgin subfamily A member 4 Ankycorbin Stonin-1 Eml5 protein Stonin-2 Golgin subfamily A member 2 Cytochrome P450 26B1 Attractin-like protein Mefv protein Nuclear nucleic acid-binding protein Alstrom syndrome protein BTB/POZ domain-containing protein Regulation of nuclear pre-mRNA domain-containing protein Cation channel sperm-associated protein Leucine-rich repeat and calponin homology domain-containing protein EPM2A-interacting protein Golgi reassembly-stacking protein Girdin SERTA domain-containing protein Pregnancy-specific glycoprotein IQ domain-containing protein Protein Lines homolog 1 Centrosome and spindle pole associated protein Serotransferrin</p>
---	--	---

<p>Invasion inhibitory protein 45 Lethal(2) giant larvae protein homolog 2 Activating molecule in BECN1-regulated autophagy protein 1 Very low-density lipoprotein receptor Vomer nasal type-1 receptor NAD-dependent protein lipoamidase sirtuin-4, mitochondrial Pleckstrin homology domain-containing family A member 7 RCC1 and BTB domain-containing protein 2 Ankyrin repeat and KH domain-containing 1 Amiloride-sensitive sodium channel subunit alpha Protein unc-80 homolog Laminin subunit alpha-5 Something about silencing protein 10 Sterol 26-hydroxylase, mitochondrial Polycomb group RING finger protein 1 Transcription factor TFIIB component B'' homolog Chromatin assembly factor 1 subunit A Disintegrin and metalloproteinase domain-containing protein Kelch-like protein 41 Serine protease 57 Survival motor neuron protein isoform h Omega-amidase NIT2 Twinkle protein, mitochondrial Nucleolar and coiled-body phosphoprotein 1 Mucolipin-1 Coxsackievirus and adenovirus receptor homolog Nuclear fragile X mental retardation-interacting protein 2</p>	<p>protein Ubiquitin conjugation factor Docking protein Protein lin-9 Mybbp1a protein Myo5c protein Replicase polyprotein 60S ribosomal protein Myosin-binding protein Leucine-rich repeat and immunoglobulin-like domain-containing nogo receptor-interacting protein Alstrom syndrome protein Cilia- and flagella-associated protein MKIAA0109 protein Alpha-crystallin B chain CUB and Sushi multiple domains DNA-binding protein Vertnin Ankyrin repeat and zinc finger domain-containing protein Pyruvate dehydrogenase protein Major urinary protein Echinoderm microtubule-associated protein-like Protein SOGA3 TBP-associated factor SH2 domain-containing protein Centromere protein CDK5 regulatory subunit-associated protein Protein APCDD1 CD72 variant Pcdha2 protein Kinectin Protein unc-45 WD repeat and HMG-box DNA-binding protein Calponin Cuedc1 protein Major facilitator superfamily domain-containing POC1 centriolar protein WD repeat-containing protein SIRP beta 1 cell surface protein</p>	<p>Polymeric immunoglobulin receptor Tripartite motif-containing protein Zinc finger CCHC domain-containing protein Protein Hook homolog 3 Testis-expressed protein pre-mRNA 3' end-processing protein Dynein, axonemal, heavy chain 11 Sprouty homolog 1 FRAS1-related extracellular matrix protein Sterol regulatory element-binding protein Tanc1 protein Zinc finger and SCAN domain-containing protein Leucine-rich repeat-containing protein Transformation/transcription domain-associated protein Dynein heavy chain 3, axonemal Hydrocephalus-inducing protein Epidermal growth factor-like protein Syntaxin-binding protein Tetratricopeptide repeat protein WD repeat-containing protein AMMECR1-like protein T-complex protein 1 subunit delta Ccdc19 protein Transmembrane protein C2 domain-containing protein Nucleolar protein Aquaporin-7 Copine-3 EF-hand calcium-binding domain-containing protein Eml1 protein Hoxb1 protein Protein SON Nesprin-2 CCR4-NOT transcription</p>
---	---	---

Isoform VEGF-B167 of Vascular endothelial growth factor B	Nesprin	complex subunit 1
Calcineurin B homologous protein 2	MKIAA1858 protein	Sp140 nuclear body protein
Exosome complex component MTR3	Chromodomain-helicase-DNA-binding protein	Cilia- and flagella-associated protein
AT-rich interactive domain-containing protein 5A	Calcium-binding and coiled-coil domain-containing protein	MARVEL domain-containing protein
Actinin alpha 2	Trichohyalin-like protein	Heterogeneous nuclear ribonucleoprotein D-like
Ubiquitin conjugation factor E4 B	Cohesin subunit SA-1	Protein Tex24
Obscurin	WD40 repeat-containing protein	Spartin
ORF2	RWD domain-containing	Spef2
Coiled-coil domain-containing 180	Envoplakin	Multiple C2 and transmembrane domain-containing protein
Coatomer subunit beta	Neurobeachin	Mitoguardin
Homeobox-containing protein 1	Stathmin	Major facilitator superfamily domain-containing protein
Probable G-protein coupled receptor 141	Immunoglobulin superfamily member	Klra19 protein
Family with sequence similarity 171, member A1	Arhgap4 protein	Kelch-like protein
Kinase non-catalytic C-lobe domain (KIND) containing 1	LIM domain-binding protein	60S ribosomal protein
Disintegrin and metalloproteinase domain-containing protein 28	Shugoshin	Glycine cleavage system P protein
Probable tubulin polyglutamylase TTL1	Cep110 protein	LIM and senescent cell antigen-like-containing domain protein
Pdgfra protein	Cingulin	Slp protein
NLR family, pyrin domain containing 4G	Mitogen-activated protein kinase kinase kinase kinase	RING finger protein
KN motif and ankyrin repeat domain-containing protein 2	Unconventional prefoldin RPB5 interactor	ATR-interacting protein
Sickle tail protein	Protein SLX4IP	NCK-associated protein
Docking protein 6	Caskin	ADP-ribosylation factor-like protein
Ubiquitin-conjugating enzyme E2C-binding protein	PR domain zinc finger protein	Tripartite motif protein
Peroxidasin homolog	Protein THEMIS	F-box/LRR-repeat protein
Leucine-rich repeat and calponin homology domain-containing protein 2	Nucleolar GTP-binding protein	Novel KRAB box and zinc finger, C2H2 type domain containing protein
60S ribosomal protein L7	AF4/FMR2 family member 3	Ankyrin repeat domain-containing protein
X-box-binding protein 1	Nuclear pore complex protein	Multidrug resistance-associated protein
Activating transcription factor 7-interacting protein 1	Mesoderm posterior protein	Collagen, type VI, alpha 3
Zinc finger CCCH domain-containing protein 15	Calcium uptake protein	Synaptosomal-associated protein
Tetratricopeptide repeat	Glycoprotein integral membrane protein	Smgc protein
	Intraflagellar transport protein	Nucleosome assembly protein 1-like
	Protein turtle	Calcium-transporting ATPase
	Leucine-rich repeat and guanylate kinase domain-containing protein	TATA box binding protein
	Ubiquitin carboxyl-terminal hydrolase 17-like protein	BTB (POZ) domain-containing
	4921511C04Rik protein	
	RNA-binding motif protein	
	Nuclear protein	
	Calmodulin-regulated spectrin-associated protein	

<p>protein 28 Armadillo-like helical domain-containing 1 Tetratricopeptide repeat protein 19, mitochondrial Zinc finger FYVE domain-containing protein 16 Calmodulin-binding transcription activator 2 EH-domain containing 4 Acyl-CoA-binding domain-containing protein 6 2610507B11Rik protein Dynein, axonemal, heavy chain 10 Protein zyg-11 homolog B Olfactory receptor RNA polymerase-associated protein RTF1 homolog rRNA-processing protein FCF1 homolog Zinc finger SCAN domains 29 Triple functional domain protein Protein SOGA3 ADP-ribosylation factor-binding protein GGA1 Cyclin-D-binding Myb-like transcription factor 1 Arylacetamide deacetylase-like 4 Integrin alpha-E Fc receptor-like A ZZ-type zinc finger-containing protein 3 KN motif and ankyrin repeat domain-containing protein 3 Potassium/sodium hyperpolarization-activated cyclic nucleotide-gated channel 3 Coiled-coil domain containing 83, isoform CRA_b Regulator of microtubule dynamics protein 1 RNA-binding protein 26 Transmembrane protein 163 Protein FAM13B STE20-related kinase adapter</p>	<p>Sodium bicarbonate transporter-like protein Serrate RNA effector molecule homolog Angiopoietin-related protein Golgi autoantigen golgin subfamily a5 Spry1 protein Slfn8 protein Homeobox-containing protein Lethal(2) giant larvae protein Charged multivesicular body protein Nucleosome assembly protein Peroxisome biogenesis factor 1 Transmembrane protein LETM1 domain-containing protein C2 calcium-dependent domain-containing MAGUK p55 subfamily member 5 Structural maintenance of chromosomes protein von Willebrand factor A domain-containing protein tRNA wybutosine-synthesizing protein Methyl-CpG-binding domain protein Fermitin family homolog 2 Hermansky-Pudlak syndrome 6 protein Nebulin Gamma-crystallin Wiz protein Nuclear factor interleukin-3-regulated protein PC4 and SFRS1-interacting protein Protein MMS22-like T-lymphoma invasion and metastasis-inducing protein C1qtnf1 protein Ankyrin repeat, SAM and basic leucine zipper domain-containing protein Fibroblast growth factor</p>	<p>M-protein Solute carrier family 13 (Sodium/sulfate symporters), member 4 Mitochondrial assembly of ribosomal large subunit protein Sodium channel and clathrin linker 1 Fanconi anemia, complementation group E Up-regulated during skeletal muscle growth protein DNA repair and recombination protein Neuropeptides B/W receptor type 1 Clasp2 protein AP-1 complex subunit gamma-like 2 Clathrin heavy chain Disks large homolog 3 Leucine-rich repeat flightless-interacting protein Patatin-like phospholipase domain-containing protein CASP8 and FADD-like apoptosis regulator Muscular LMNA-interacting protein Spermatogenesis-associated glutamate (E)-rich protein START domain-containing protein Tissue-resident T-cell transcription regulator protein Lebercilin Rfc2 protein Ankyrin repeat and LEM domain-containing protein Destrin Amyloid-beta A4 precursor protein-binding family B member 2 Structural maintenance of chromosomes protein Fat storage-inducing transmembrane protein Sperm-tail PG-rich repeat-</p>
---	---	--

<p>protein beta Paraneoplastic antigen Ma1 homolog Probable global transcription activator SNF2L2 Disintegrin and metalloproteinase domain-containing protein 23 Protein fem-1 homolog B Bromo adjacent homology domain-containing 1 protein Actin-related protein T3 Adipocyte plasma membrane-associated protein EH domain-binding protein 1 FUN14 domain-containing protein 1 Interferon regulatory factor 7 CREB-regulated transcription coactivator 2 Rap guanine nucleotide exchange factor (GEF) 6 MANSC domain containing 1 BRI3-binding protein Telomerase-binding protein EST1A Leukocyte cell-derived chemotaxin-2 Chondroitin sulfate proteoglycan 4 Nucleolar protein 11 BCL2-associated athanogene 4 Nucleolar complex protein 3 homolog tRNA (uracil(54)-C(5))-methyltransferase homolog Neurotensin receptor 1 Peroxisome biogenesis factor 10 Nuclear pore complex protein Nup54 Transient receptor potential cation channel subfamily M member 5 Arginyl-tRNA--protein transferase 1 Proline-rich 36 Plec1 protein Dynactin subunit 6</p>	<p>Period circadian protein Melanocortin 5 receptor Podn protein Glutamate-rich Follistatin-related protein F-box/LRR-repeat protein Cytoplasmic FMR1-interacting protein AT-hook DNA-binding motif-containing protein LisH domain-containing protein Protein NPAT DNA repair and recombination protein Pyridine nucleotide-disulfide oxidoreductase domain-containing protein Protein cereblon Fanconi anemia, complementation group E Mastermind-like protein Vacuolar protein sorting 13D La-related protein PHD finger protein Protein transport protein G-protein coupled receptor-associated sorting protein Retinoic acid receptor responder protein Calmegin Transcription factor HIVEP3 Helix-loop-helix protein Os9 protein Epb4.1I2 protein Smoothelin-like protein Bcl-2-interacting killer ADP-ribosylation factor-like protein 6-interacting protein Nuclear receptor-interacting protein Transforming growth factor-beta receptor-associated protein 40S ribosomal protein Cysteine-rich perinuclear theca protein Nup153 protein Camsap11 protein</p>	<p>containing protein BEN domain-containing protein Sh3tc1 protein PHD finger protein Asxl2 protein TATA box-binding protein-like protein HMW-kininogen-II variant Hematopoietic lineage cell-specific protein Homeobox protein Methyl-CpG-binding protein Elongation of very long chain fatty acids protein Krev interaction trapped protein F-BAR domain only protein CASP8-associated protein Protein Smaug homolog 2 Proliferation marker protein Ephrin type-B receptor 4 Calcium homeostasis endoplasmic reticulum protein Epiplakin Intraflagellar transport protein MICAL-like protein Histidine-rich glycoprotein NACHT, leucine rich repeat and PYD containing 10 Vitellogenin-like 1 Actin-related protein 2/3 complex subunit 5-like protein EH domain-binding protein Dach1 protein Kifc1 protein Kinesin light chain Retinal degeneration 3-like DNA repair protein Bone morphogenetic protein Nuclear protein Collagen alpha-1(XII) chain Nup214 protein Zinc finger protein-like Ceramide-1-phosphate transfer protein Choline transporter-like protein Ankyrin repeat and SOCS box protein Dickkopf-related protein</p>
---	---	--

<p>Family with sequence similarity 129, member C</p> <p>LIM homeobox transcription factor 1-beta</p> <p>BMP/retinoic acid-inducible neural-specific protein 1</p> <p>Vacuolar protein sorting-associated protein 13C</p> <p>Ubiquitin carboxyl-terminal hydrolase 37</p> <p>CUB and sushi domain-containing protein 3</p> <p>Dynein regulatory complex subunit 4</p> <p>WD repeat domain 97</p> <p>Slit homolog 2 protein</p> <p>Sacsin</p> <p>Tubulin-specific chaperone D</p> <p>EF-hand calcium-binding domain-containing protein 3</p> <p>MAP7 domain-containing protein 3</p> <p>Polycomb protein SCMH1</p> <p>Midasin</p> <p>G protein-coupled receptor kinase</p> <p>Phosphatidylinositol-glycan biosynthesis class F protein</p> <p>Cytochrome b561 domain-containing protein 2</p> <p>Protein odd-skipped-related 2</p> <p>FYVE, RhoGEF and PH domain-containing protein 1</p> <p>KRR1 small subunit processome component homolog</p> <p>Transient receptor potential cation channel subfamily M member 8</p> <p>THO complex subunit 2</p> <p>Arylsulfatase I</p> <p>FYVE and coiled-coil domain-containing protein 1</p> <p>Protocadherin-8</p> <p>Disks large homolog 1</p> <p>Protein salvador homolog 1</p> <p>O-acyltransferase like protein</p> <p>Ubiquitin recognition factor in ER-associated degradation</p>	<p>Holliday junction recognition protein</p> <p>G patch domain-containing protein</p> <p>Telomeric repeat-binding factor ASL1/Glx2 fusion protein</p> <p>Prpsap2 protein</p> <p>Sec24d protein</p> <p>Sperm-associated antigen 16 protein</p> <p>Cadherin-like and PC-esterase domain-containing</p> <p>Fat 1 cadherin</p> <p>Calcium-binding protein</p> <p>Sarm1 protein</p> <p>Catenin delta-1</p> <p>Maestro heat-like repeat-containing protein</p> <p>Probable G-protein coupled receptor</p> <p>Spf2</p> <p>Extracellular matrix protein</p> <p>Rieske domain-containing protein</p> <p>Cadherin EGF LAG seven-pass G-type receptor</p> <p>Methenyltetrahydrofolate synthase domain-containing protein</p> <p>Multimerin</p> <p>Hermansky-Pudlak syndrome 1 protein</p> <p>Recq15 protein</p> <p>Ap3d1 protein</p> <p>ZZ-type zinc finger-containing protein</p> <p>Adenomatous polyposis coli protein</p> <p>NAC-alpha domain-containing protein</p> <p>APC membrane recruitment protein</p> <p>Desmoplakin</p> <p>Ube4a protein</p> <p>Abi3bp protein</p> <p>Irx2 protein</p> <p>BCL-6 corepressor-like protein</p> <p>Pdzd7 protein</p>	<p>Ribosome maturation protein</p> <p>Dynamin-3</p> <p>Synaptonemal complex protein</p> <p>Centromere protein</p> <p>Caveolae-associated protein</p> <p>SH3 domain and tetratricopeptide repeats</p> <p>Transforming growth factor-beta receptor-associated protein</p> <p>Formin-binding protein 1-like</p> <p>Camsap111 protein</p> <p>Syntaxin-16</p> <p>Haloacid dehalogenase-like hydrolase domain-containing protein</p> <p>Trichohyalin-like protein</p> <p>Laminin subunit alpha-1</p> <p>Nucleus accumbens-associated protein</p> <p>Ankyrin repeat and KH domain-containing</p> <p>PX domain-containing protein</p> <p>Vimentin-type intermediate filament-associated coiled-coil protein</p> <p>Spermatogenesis-associated protein</p> <p>M-phase inducer phosphatase</p> <p>Syntaxin-11</p> <p>Low-density lipoprotein receptor-related protein</p> <p>Endoplasmic reticulum junction formation protein</p> <p>Thyroglobulin</p> <p>Rab interacting lysosomal protein</p> <p>Complement C3</p> <p>Fibulin-1</p> <p>Vlgr1</p> <p>BIV spectrin</p> <p>Protein RMD5 homolog B</p> <p>Sorting nexin-21</p> <p>AF4/FMR2 family member 3</p> <p>Recq15 protein</p> <p>Integrator complex subunit 11</p> <p>SLAIN motif-containing protein</p> <p>Protein inscuteable homolog</p>
---	---	--

<p>protein 1 Protein sidekick-2 Eml1 protein Pyridoxine-5'-phosphate oxidase Collagen alpha-1(XIV) chain WD repeat-containing protein 81 Toll-like receptor 11 AMP deaminase 1 Ryanodine receptor 2 Kinesin-like protein KIF1B Nxt2 protein GAS2-like protein 2 Abnormal spindle-like microcephaly-associated protein homolog Potassium channel tetramerisation domain-containing 17 Myotubularin-related protein 1 Tricarboxylate transport protein, mitochondrial Mitogen-activated protein kinase kinase kinase 4 Protein regulator of cytokinesis 1 Single-minded homolog 1 Trafficking protein particle complex subunit 9 EGF-containing fibulin-like extracellular matrix protein 2 Cation channel sperm-associated protein subunit gamma 2 Tubulin polyglutamylase TTL11 Adhesion G protein-coupled receptor V1 RAD50-interacting protein 1 CCAAT/enhancer-binding protein zeta Slc35d1 protein Kinectin 2-(3-amino-3-carboxypropyl)histidine synthase subunit 2 Bactericidal permeability-increasing protein</p>	<p>Vinculin Protein fem-1 Microtubule-actin cross-linking factor Forkhead-associated domain-containing protein Serine/arginine-rich splicing factor Krupple-related zinc finger protein NACHT and WD repeat domain-containing protein HEPACAM family member Muscular LMNA-interacting protein Probable JmjC domain-containing histone demethylation protein Plexin DNA mismatch repair protein Protein FAM3D Dedicator of cytokinesis protein Regulator of G-protein signaling Ankyrin repeat and LEM domain-containing protein Mitochondria-eating protein Transforming growth factor-alpha Receptor expression-enhancing protein Sodium channel and clathrin linker Kelch domain containing MICAL-like protein MLX interacting protein-like beta Protein Smaug Pro-interleukin-16 Tuberin Vesicle transport protein PX domain-containing protein Sodium- and chloride-dependent glycine transporter Patatin-like phospholipase domain-containing protein Duox2 protein Tigger transposable element-derived protein</p>	<p>RNA-binding motif protein Insulin gene enhancer protein ISL-2 Basement membrane-specific heparan sulfate proteoglycan core protein NUT family member 1 Baculoviral IAP repeat-containing protein Selenium-binding protein Vacuolar protein sorting 13D Gamma-aminobutyric acid receptor subunit alpha-3 Alpha-2-macroglobulin receptor-associated protein Sickle tail protein Leucine-rich repeats and WD repeat domain-containing 1 SH3 and multiple ankyrin repeat domains protein Viral protein Jarid2 protein Voltage-dependent anion-selective channel protein Myosin-binding protein C, cardiac-type 39S ribosomal protein L14, mitochondrial Hermansky-Pudlak syndrome Tau-tubulin kinase 1 60S ribosome subunit biogenesis protein NIP7 homolog Sodium channel protein type 10 subunit alpha PIH1 domain-containing protein Oasl2 protein Proteasome subunit beta type piRNA biogenesis protein Chloride channel protein LIM domain and actin-binding protein Neurobeachin Aprataxin Follistatin Nck-associated protein 1-like Basal body-orientation factor 1 Podn protein</p>
---	--	---

Inositol 1,4,5-trisphosphate receptor type 2	SRR1-like protein	Titin
Muscular LMNA-interacting protein	Tanc1 protein	Transportin-1
PX domain-containing protein 1	GTP-binding protein	Small conductance calcium-activated potassium channel protein
Syntaxin-binding protein 5	WW domain-containing adapter protein with coiled-coil	CD209 antigen-like protein
Limbic system-associated membrane protein	IQ motif and SEC7 domain-containing protein	ERO1-like beta
Tripartite motif-containing 60	Utrophin	Gamma-crystallin B
Kalirin	F-box only protein	Aladin
Serine/threonine-protein kinase PLK4	Multidrug resistance-associated protein	Neurexin-1
Coronin-6	Zinc finger B-box domain-containing protein	LON peptidase N-terminal domain and RING finger protein
NF-kappa-B inhibitor-interacting	Zinc finger E-box-binding homeobox	MLX-interacting protein
Ras-like protein 1	Junctophilin	TRAF3-interacting protein
Trafficking protein particle complex subunit 11	Acetolactate synthase-like protein	Seminal vesicle secretory protein
Transitional endoplasmic reticulum ATPase	Kinesin superfamily protein	Protein Hook homolog 1
Transient receptor potential cation channel subfamily A member 1	Synaptic nuclear envelope	Myomesin-1
Acyl-Coenzyme A dehydrogenase family, member 12	Glial fibrillary acidic protein	Vacuolar protein sorting-associated protein 28 homolog
Trim25 protein	Alpha- and gamma-adaptin-binding protein	PTB domain-containing engulfment adapter protein
Arginase-2, mitochondrial	Myotubularin-related protein	Papolg protein
Acyl-CoA thioesterase 8, isoform CRA_c	Spectrin beta chain	Complement component 6
Calcium-activated chloride channel regulator 1	Centrobilin	Speckle-type POZ protein-like
ATP-binding cassette sub-family A member 7	Thioredoxin domain-containing protein	ASL1 fusion protein
Transmembrane protein 160	Rps16 protein	Mas-related G protein-coupled receptor g15
Ppig protein	EF-hand calcium-binding domain-containing protein	Erythroid membrane-associated protein
Cbp37	Huntingtin	ScFv B8E5 protein
X-ray radiation resistance-associated protein 1	Actin filament-associated protein	Inactive hydroxysteroid dehydrogenase-like protein
Disks large-associated protein 2	Immunoglobulin-like and fibronectin type III domain-containing protein	CPXV019 protein
Snf2-related CREBBP activator protein	LEM domain-containing protein	Sister chromatid cohesion protein PDS5 homolog B
ATP-binding cassette sub-family G member 2	Calpain	SUN domain-containing protein
Astrotactin-2	Proline-rich protein	Leucine-rich repeat and IQ domain-containing protein
Multiple C2 and transmembrane domain-containing protein 2	Claudin	Potassium voltage-gated channel subfamily B member 2
Dynamin-binding protein	Pumilio	Acetolactate synthase-like protein
	Afadin	Glutamine and serine-rich 1
	Dock9 protein	Golgb1 protein
	Fibrous sheath-interacting protein	Pre-mRNA-splicing factor
	Bromodomain adjacent to zinc finger domain protein	RBM22
		Myocardin

<p>Ankyrin-2 Long-chain fatty acid transport protein 3 TBP-associated factor 170 ATP-binding cassette sub-family B member 7, mitochondrial Beta-1-syntrophin Collagen alpha-4(VI) chain Extracellular matrix protein FRAS1 Bloom syndrome protein homolog Copper-transporting ATPase 2 Il2rb protein Transcription initiation factor IIE subunit beta Desmoglein-3 60 kDa glycoprotein Calcium/calmodulin-dependent protein kinase II inhibitor 2 Stonin-2 TAP2 Inactive hydroxysteroid dehydrogenase-like protein 1 Cardiotrophin 2 Decorin BTB/POZ domain-containing protein KCTD9 Cystatin Usherin Hermansky-Pudlak syndrome 6 protein homolog Low-voltage-activated calcium channel alpha13.3 subunit Protocadherin beta 15 Serine/threonine-protein kinase ULK1 Dynein, axonemal, heavy chain 7B Tyrosine-protein kinase receptor Solute carrier family 12, member 7 Xanthine dehydrogenase/oxidase Zinc finger and BTB domain-containing protein 46 Zinc finger BED domain-</p>	<p>Tubulin epsilon and delta complex protein DEP domain-containing protein UV radiation resistance-associated protein Peroxisome proliferator-activated receptor gamma coactivator-related protein Kalirin Thyroxine-binding globulin Non-specific lipid-transfer protein Microtubule-associated tumor suppressor Cadherin Transducin beta-like protein Protein timeless homolog RILP-like protein Protein Hook homolog PDZ domain containing RING finger Band 4.1-like protein AT-hook-containing transcription factor NCK-associated protein MAP7 domain-containing protein Syntaxin-binding protein Ankyrin repeat and SOCS box protein MRN complex-interacting protein Metal transporter FERM and PDZ domain-containing protein Atlastin Zona pellucida sperm-binding protein Heme-binding protein LINE-1 retrotransposable element ORF2 protein Contactin Huntingtin-associated protein RNA binding motif protein Osteocalcin Methyltransferase-like protein Transformation/transcription domain-associated protein</p>	<p>Actn1 protein Homer protein homolog 1 Protein NPAT Period circadian protein homolog 1 Mirror-image polydactyly gene 1 protein homolog Cadherin-24 Forkhead box protein R2 Adarb2 protein NHS-like protein Rootletin Mcm3ap protein Synergism gamma Gm1070 protein GTP-binding protein Kinesin heavy chain isoform 5C Protein fem-1 homolog A-B Arf-GAP with Rho-GAP domain, ANK repeat and PH domain-containing protein Protein FAM13A Caskin1 protein HN1-like protein Protein FAM189B Pdap1 protein KH homology domain-containing protein CDK5 regulatory subunit associated protein CLIP-associating protein Regulator complex protein Cas scaffolding protein Claspin Hippocalcin-like protein Actin filament-associated protein Kinectin Interferon-induced GTP-binding protein Follistatin-related protein ARF GTPase-activating protein MyoD family inhibitor domain-containing protein Cysteine and glycine-rich protein Peptidylprolyl isomerase domain and WD repeat-</p>
---	--	--

<p>containing protein 6 Transcription termination factor 1 Coiled-coil and C2 domain-containing 2B Thyroid hormone receptor interactor 11 Cyclin-dependent kinase 15 Phospholipid-transporting ATPase IK Collagen alpha-2(XI) chain Optic atrophy 3 protein homolog DCN1-like protein 2 Disheveled-associated activator of morphogenesis 1 Cytochrome P450 2C29 MCG130490 Nuclear factor NF-kappa-B p100 subunit 60S acidic ribosomal protein P0 Nuclear fragile X mental retardation-interacting protein 1 Receptor tyrosine-protein kinase erbB-2 Atypical kinase COQ8B, mitochondrial Collagen alpha-1(XXIV) chain Protein SOGA1 Sodium channel protein type 3 subunit alpha Cyclin-H Ribosomal protein S6 kinase Activating transcription factor 7-interacting protein 2 Active breakpoint cluster region-related protein Kinesin-like protein KIF21A Dystrophin Nebulin La-related protein 6 60S ribosomal protein L34 Transmembrane protein 108 Pregnancy-specific glycoprotein 21 Ladinin-1 Mitogen-activated protein</p>	<p>Carbohydrate-responsive element-binding protein Leucine-rich repeat and death domain-containing protein Usherin MICAL C-terminal-like protein Copa protein Protein RFT1 homolog Dmwd protein E1A-binding protein TPR and ankyrin repeat-containing protein Bardet-Biedl syndrome 10 protein Protocadherin Fat NHL repeat containing Contactin-associated protein Protein scribble Cacna2d4 protein GATOR complex protein AP2-interacting clathrin-endocytosis protein IQ motif-containing Extra large alpha stimulating guanine-nucleotide binding protein TatD DNase domain-containing Myelin basic protein Plec1 protein Zinc finger CCCH-type antiviral protein U3 small nucleolar ribonucleoprotein protein Pregnancy-specific glycoprotein Arginine and glutamate-rich protein Mitogen-activated protein kinase-binding protein Alpha1-chimerin XK-related protein Cpn2 protein Brain-specific angiogenesis inhibitor 1-associated protein Secretagoin Chloride channel protein Zinc finger FYVE domain-containing protein Thrombospondin type-1</p>	<p>containing protein Pericentrin Multimerin-2 Forkhead box N2 Fc fragment of IgG-binding protein Protein DBF4 homolog A Myelin protein zero-like protein Leucine-rich PPR motif-containing protein, mitochondrial LARP7 NAC-alpha domain-containing protein ATP-binding cassette sub-family B member 9 Kinesin-like protein Solute carrier family 22 member 8 Lamin-B2 PWWP domain-containing 2B Apolipoprotein B-100 270-kDa ankyrinG S phase cyclin A-associated protein in the ER Cullin-3 Carbohydrate-responsive element-binding protein Similar to (NP_033194.1) src homology 2 domain-containing transforming protein Cubilin Coiled-coil and C2 domain-containing protein Sonic hedgehog protein Copper transport protein ATOX1 Protein ERGIC-53-like Guanine nucleotide-binding protein subunit alpha-12 Slc2a13 protein LisH domain-containing protein ARMC9 AT-rich interactive domain-containing protein 2 Hippocalcin-like protein 1 Nuclear factor interleukin-3-regulated protein</p>
--	--	---

<p>kinase kinase kinase 12 Ankyrin repeat domain-containing protein 27 MKIAA4149 protein Scm-like with four MBT domains protein 2 WD repeat and SOCS box-containing 1 DENN domain-containing protein 5B Ankrd11 protein Flotillin-2 Ubiquitin carboxyl-terminal hydrolase 17-like protein B Nucleotide-binding oligomerization domain-containing protein 1 Immunoglobulin lambda-like polypeptide 1 Mon2 protein Kelch-like protein 21 M18 protein CaM kinase-like vesicle-associated protein Multiple C2 and transmembrane domain-containing protein 1 28S ribosomal protein S28, mitochondrial Signal-induced proliferation-associated 1-like protein 3 Testis-specific serine kinase substrate Maestro heat-like repeat-containing protein family member 7 Methyl-CpG-binding domain protein 5 Activity-dependent neuroprotector homeobox protein 2 Metabotropic glutamate receptor 2 6kDa intracellular viral protein ASL1/Herc2 fusion protein Disabled homolog 2 Transcription factor AP-2 gamma</p>	<p>domain-containing protein Tetraspanin 60S ribosome subunit biogenesis protein Rotatin Leucine-rich repeat transmembrane neuronal protein Secretogranin Rtkn2 protein Crlf1 protein SUN domain-containing protein Proteasome subunit alpha type-5 MutS protein Krt6b protein Vigilin Coiled-coil domain containing Complement component receptor 1-like protein Afamin IQ domain-containing protein SorCS3 Protein CASP Trafficking protein particle complex subunit Ca2+-dependent activator protein for secretion 2 isoform e Fancg protein Sacsin Ankyrin repeat and EF-hand domain-containing protein Putative Polycomb group protein SET domain bifurcated protein CMT1A duplicated region transcript 4 protein Host cell factor Podocin Lipoxygenase homology domain-containing protein L1 unspliced fusion gene protein Polymerase delta-interacting protein Pcdh20 protein Presenilins-associated</p>	<p>F9 protein DNA mismatch repair protein Synaptotagmin-like protein Sperm-associated antigen 16 protein Chromodomain helicase DNA-binding protein Fibrous sheath-interacting protein Cep110 protein 40S ribosomal protein Sex comb on midleg-like protein Specifically androgen-regulated gene protein Protein crumbs homolog Sacsin Protein prune homolog 2 Calcium-binding protein Actin filament-associated protein 1-like 2 Transcription elongation factor A protein-like 1 ADP-ribosylation factor-related protein Intestinal peptide transporter PEPT1 Cytoplasmic phosphatidylinositol transfer protein Wiz protein Catenin delta-1 Mastermind-like protein 1 KRAB-zinc finger protein 78 Neuroplastin Smoothelin-like protein G patch domain-containing protein YLP motif-containing protein Lta protein Egl nine homolog 3 FYVE and coiled-coil domain-containing protein Membrane-associated guanylate kinase, WW and PDZ domain-containing protein Fidgetin-like protein DmX-like protein V-set and transmembrane</p>
--	---	--

Collagen alpha-1(XXVIII) chain Calsyntenin-2 Myotubularin-related protein 3 Phosphatidylinositol 3-kinase catalytic subunit type 3 Transcription factor AP-2-delta Laminin subunit alpha-3 Ankyrin repeat and EF-hand domain-containing protein 1 Importin subunit alpha Nuclear pore complex protein Nup98-Nup96 VPS9-ankyrin-repeat protein Coro2a protein Centlein Cyclin-dependent kinase 2- interacting protein Oocyte-specific homeobox 2 Spermatogenesis-associated protein 13 Exocyst complex component 5 Vasodilator-stimulated phosphoprotein Homeobox-containing protein 11 Pleckstrin homology domain- containing family O member 1 Slc24a2 protein Cyclic nucleotide-gated cation channel alpha-3 Kinetochores scaffold 1 Protein unc-13 homolog C A-kinase anchor protein 9 KIAA1739 protein TRAF family member-associated NF-kappa-B activator Meiosis inhibitor protein 1 Protein fem-1 homolog A-B H/ACA ribonucleoprotein complex subunit 2 Torsin-3A ATP synthase mitochondrial F1 complex assembly factor 1 Brain-specific angiogenesis inhibitor 1-associated protein 2 Protein kinase C and casein kinase II substrate protein 3 Complement C4-B	rhomboid-like protein Paired box protein Protein Churchill AAM-B protein Ataxin-2-like protein Drebrin-like protein Spartin Sulfonylurea receptor Slit homolog 1 protein Polycystin Synaptonemal complex protein Myxovirus influenza virus resistance protein PDZ domain-containing protein SH3 and cysteine-rich domain- containing protein Formin TERF1-interacting nuclear factor Phip protein Cullin Retinol-binding protein Box C/D snoRNA protein Storkhead-box protein Albumin ErbB2ip protein Pregnancy zone protein U3 small nucleolar RNA- interacting protein Pcdha7 protein Zfp384 protein Protein SCA1 Pyridoxal-dependent decarboxylase domain- containing protein Centlein Vacuolar protein sorting- associated protein Leucine-rich repeat and WD repeat-containing protein Protein yippee-like Proliferation marker protein SCY1-like protein Calbindin Protein DBF4 Claudin domain-containing protein Cysteine-rich secretory protein Arhgef10l protein	domain-containing protein Muscle protein N-terminal EF-hand calcium- binding protein Meiosis-specific coiled-coil domain-containing protein Sct protein Transient receptor potential cation channel subfamily A member 1 Pikachurin F-actin-capping protein subunit alpha-1 Exocyst complex component 3- like protein RILP-like protein Cell division cycle protein 27 homolog Villin-like protein WD repeat and FYVE domain- containing protein Semaphorin-3C Integral membrane protein Autophagy protein Vimentin La-related protein Ap3d1 protein Fanconi anemia protein Pro-interleukin-16 Pericentriolar material 1 protein Beta-actin-like protein Laminin subunit alpha-2 Protein mab-21-like GATOR complex protein Rps6ka3 protein Myotubularin-related protein Periostin Involucrin Glial fibrillary acidic protein Taste receptor type 2 member 39 1-aminocyclopropane-1- carboxylate synthase-like protein Protein FAM208B Angiomotin Palladin Abnormal spindle-like
---	--	--

<p>RING finger protein 225 Protein bicaudal D homolog 1 Gamma-soluble NSF attachment protein Sorbin and SH3 domain-containing protein 2 GRB2-associated and regulator of MAPK protein Alpha-parvin T-lymphoma invasion and metastasis-inducing protein 2 Folliculin Rhomboid domain-containing protein 2 Endoplasmic reticulum resident protein 29 Basic leucine zipper transcriptional factor ATF-like Polycystin-1 Ear5 protein Transmembrane protein 132D Orofacial cleft 1 candidate gene 1 protein homolog Patatin-like phospholipase domain-containing protein 7 CUGBP Elav-like family member 2 Complexin-2 PHD finger protein 3 Paired box protein Pax-1 Zinc finger CW-type PWWP domain protein 1 SH3 and PX domains 2B Kelch-like 4 Cytoplasmic dynein 2 light intermediate chain 1 Exocyst complex component 7 Tastin Taste receptor type 2 member 123 SEC14 domain and spectrin repeat-containing protein 1 Early endosome antigen 1 Kinesin-like protein KIF19 cAMP-regulated phosphoprotein 21 Kinesin-like protein KIFC3 ADP-ribosylation factor-</p>	<p>RNA polymerase-associated protein Kinetochore-associated protein Pet2 protein Survival motor neuron protein Sox21 protein TAR DNA-binding protein Prostate tumor-overexpressed gene 1 protein Anion exchange protein Zfp595 protein Fibroblast growth factor-binding protein Calmodulin-like protein Synergism gamma X-box-binding protein Arf-GAP with SH3 domain, ANK repeat and PH domain-containing protein Desmoglein CAP-Gly domain-containing linker protein High mobility group nucleosome-binding domain-containing protein Putative DMBT1-like protein Myb/SANT-like DNA-binding domain-containing protein NACHT domain- and WD repeat-containing protein Protein crumbs Fbxw13 protein 60S acidic ribosomal protein Leucine-rich repeat neuronal protein Peptidoglycan recognition protein Calsyntenin Tectonic-3 Transmembrane channel-like protein Kinetochore protein Disks large-associated protein Vasodilator-stimulated phosphoprotein Tubulin-specific chaperone E Espn Mucolipin</p>	<p>microcephaly-associated protein homolog Uveal autoantigen with coiled-coil domains and ankyrin repeats Protein Daple Cactin Disabled homolog 2-interacting protein Zkscan2 protein Double-stranded RNA-binding protein Cullin-4B Talin-2 FERM and PDZ domain-containing A kinase (PRKA) anchor protein Myelin basic protein Rab GTPase-binding effector protein Cnga1 protein Calcium homeostasis modulator protein Nucleolar complex protein 2 homolog Synaptotagmin XII Olfm4 protein Nesprin-3 Gas1 protein Contactin-2 Ligand-dependent nuclear receptor corepressor-like protein Myomegalin U4/U6.U5 tri-snRNP-associated protein Membrane-associated phosphatidylinositol transfer protein Abca12 protein Exocyst complex component 2 Nebulin-related-anchoring protein Claudin Protein cereblon snRNA-activating protein complex subunit 2 Gem (Nuclear organelle)</p>
--	--	---

<p>interacting protein 1 SH2 domain-containing protein 3C Dynein, axonemal, heavy chain 14 Zinc finger homeobox protein 4 Prpsap2 protein Filamin-A-interacting protein 1 DmX-like protein 1 G-protein-signaling modulator 2 Gasdermin-D Neurexophilin-1 Echinoderm microtubule-associated protein-like 5 Protein DDI1 homolog 1 Myelin protein P0 Ankyrin repeat domain-containing protein 13C Casein kinase I isoform gamma-1 Fatty acyl-CoA reductase 1 Kelch domain-containing protein 4 WSC domain-containing protein 1 Protein unc-13 homolog D Pcdh20 protein Charged multivesicular body protein 4c BAH and coiled-coil domain-containing protein 1 TRIO and F-actin-binding protein GLI pathogenesis-related 1-like 3 Vacuolar protein sorting 13D Otogelin-like protein snRNA-activating protein complex subunit 3 RNA-binding protein Raly Protein NLRC5 Zinc finger, C3H1-type-containing Neuronal apoptosis inhibitory protein 2 Transforming growth factor-alpha DnaJ homolog subfamily C</p>	<p>LIM domain-containing protein Vasorin Leucine-rich repeat and IQ domain-containing protein Nestin Serotransferrin Sodium leak channel non-selective protein Smage-3 protein FRAS1-related extracellular matrix protein Cyclic nucleotide gated channel alpha Conserved oligomeric Golgi complex subunit Zinc finger MYM-type protein Kelch repeat and BTB domain-containing protein Meiosis inhibitor protein Interferon gamma inducible protein Multiple C2 and transmembrane domain-containing protein Major sperm fibrous sheath protein Myelin protein zero-like protein Beta-actin-like protein Disintegrin and metalloproteinase domain-containing protein MANSC domain containing Alpha-hemoglobin stabilizing protein Aprataxin Rbbp6 protein Arf-GAP with GTPase, ANK repeat and PH domain-containing protein Nuclear receptor-binding protein Nucleolar complex protein NACHT, LRR and PYD domains-containing protein Zfhx3 protein Nucleolar pre-ribosomal-associated protein Fat storage-inducing</p>	<p>associated protein Cilia and flagella-associated protein Tenascin-N FAST kinase domain-containing protein Regulating synaptic membrane exocytosis protein Envoplakin Complement factor H-related protein C isoform 2 Stathmin-4 Synaptotagmin-17 Protein KRI1 homolog Cytoplasmic dynein 1 intermediate chain 2 Calm5 protein Fanconi anemia, complementation group M Alpha- and gamma-adaptin-binding protein Spon1 protein Dedicator of cytokinesis protein Cytospin-A Ephrin-B2 Sarcolemmal membrane-associated protein Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2 Transmembrane channel-like protein Vac14 protein Versican core protein Period circadian protein homolog 1 Chromodomain-helicase-DNA-binding protein Iroquois-class homeodomain protein Sorting nexin-25 ATP synthase protein Torsin-1A-interacting protein Alstrom syndrome protein 1 homolog Alpha-actinin-4 Spondin-2 Thioredoxin-related</p>
---	--	---

<p>member 25 ADP-ribosylation factor-like protein 1 Nuclear pore membrane glycoprotein 210 Stathmin-3 Tubby-related protein 4 Low density lipoprotein receptor-related protein 1 Canalicular multispecific organic anion transporter cMOAT Sterile alpha motif domain-containing protein 9-like EF-hand calcium-binding domain-containing protein 6 Follistatin-related protein 4 40S ribosomal protein S5 F-box and WD-40 domain protein 13 tRNA selenocysteine 1-associated protein 1 Truncated env G patch domain-containing protein 1 MKIAA4106 protein A-kinase anchor protein 13 Intraflagellar transport protein 172 homolog SLIT and NTRK-like protein 3 Roundabout homolog 1 Ankyrin repeat domain-containing protein 17 CUB and sushi domain-containing protein 1 Contactin-associated protein-like 3 Opalin Putative DMBT1-like protein Intraflagellar transport protein 81 homolog Cardiomyopathy-associated protein 5 Calcium/calmodulin-dependent protein kinase type II subunit beta Torsin-1B Abi3bp protein WD repeat-containing protein</p>	<p>transmembrane protein RUN domain-containing protein FERM domain-containing protein Sushi, von Willebrand factor type A, EGF and pentraxin domain-containing protein A-kinase anchor protein GRAM domain-containing protein Mirror-image polydactyly gene 1 protein Numa1 protein KH domain-containing, RNA-binding, signal transduction-associated protein Spatacsin Mitogen-activated protein kinase 8 interacting protein Hfm1 protein Filamin-A Alpha-1B-glycoprotein Exosc9 protein Nucleolar protein DENN domain-containing protein Sideroflexin Abcc8 protein Hydrocephalus-inducing protein Filamin Gm1070 protein Pericentrin SNO protein Testin Protein NipSnap MKIAA4187 protein Zkscan2 protein Testis-expressed protein Tropomodulin</p>	<p>transmembrane protein Germinal-center-associated nuclear protein Ankyrin-3 Dynein regulatory complex protein Macrosialin Spir-2 protein U2 snRNP-associated SURP motif-containing protein Inter-alpha-trypsin inhibitor heavy chain H3 Cell migration-inducing and hyaluronan-binding protein Folliculin-interacting protein Gramd4 protein Hyaluronan and proteoglycan link protein Calcium-binding protein 39-like Tudor and KH domain-containing protein Protein furry homolog Dock9 protein Host cell factor 2 Beta-actin-like protein Survival motor neuron protein isoform h Brain-specific angiogenesis inhibitor 1-associated protein NACHT, LRR and PYD domains-containing protein Late cornified envelope-like proline-rich protein SLIT and NTRK-like protein Polyadenylate-binding protein NEDD4-binding protein Fibrocystin-L Lumican Axin-1 Regucalcin Protein mago nashi homolog 2 Whirlin Long-chain fatty acid transport protein MICAL C-terminal-like protein GRB2-associated-binding protein Minichromosome maintenance</p>
---	--	---

<p>34 Teneurin-1 Gm1070 protein GRAM domain-containing protein 1B C-Jun-amino-terminal kinase-interacting protein 4 Novel KRAB box and zinc finger, C2H2 type domain containing protein HAUS augmin-like complex subunit 4 Synemin Peroxisomal targeting signal 1 receptor Hemoglobin subunit beta-H1 Tubulin epsilon and delta complex protein 2 Outer dense fiber protein 4 Ribosome biogenesis protein NSA2 homolog Serine/arginine repetitive matrix protein 2 LIM domain-containing protein 1 MCG13589 Tetratricopeptide repeat protein 23 General transcription factor IIE subunit 1 Solute carrier family 12 member 6 KICSTOR complex protein SZT2 Gem (Nuclear organelle) associated protein 5 Ankyrin repeat domain-containing protein 22 Transducin beta-like protein 2 Collagen alpha-1(VII) chain Small nuclear ribonucleoprotein Sm D1 Neuralized-like protein 2 Inactive tyrosine-protein kinase PEAK1 Larp7 protein Microtubule-associated protein 4 MAGUK p55 subfamily member</p>		<p>domain-containing protein AN1-type zinc finger protein Dermatan-sulfate epimerase-like protein [Protein ADP-ribosylarginine] hydrolase-like protein 1 Myb protein Zinc finger ZZ-type and EF-hand domain-containing protein Grm6 protein Sox21 protein Paired immunoglobulin-like type 2 receptor alpha Vezatin Coatomer subunit beta Box C/D snoRNA protein Dgcr6 protein Nischarin Pet2 protein snRNA-activating protein complex subunit 4 Guanine nucleotide-binding protein-like 3-like protein Nucleoporin NUP35 UPF0454 protein EF-hand domain containing 1 Receptor tyrosine-protein kinase erbB-3 Peroxidasin homolog Bcl-2-like protein MRN complex-interacting protein Shootin-1 Cohesin subunit SA-1 Serrate RNA effector molecule homolog Inter-alpha-trypsin inhibitor heavy chain H4 PR domain zinc finger protein Cyclic AMP-responsive element-binding protein 3-like protein Transcriptional protein Pecanex-like protein Proteasome assembly chaperone KN motif and ankyrin repeat domain-containing protein Disintegrin and</p>
--	--	---

<p>6 Transcription factor E4F1 SAPS domain family, member 1 Actin-like 6A, isoform CRA_a Nuclear receptor-interacting protein 1</p>		<p>metalloproteinase domain-containing protein Meiosis inhibitor protein Paired box protein Gamma-aminobutyric acid receptor associated protein Myoferlin Zinc finger homeobox protein Voltage-dependent calcium channel gamma-3 subunit Unc-93 homolog A Solute carrier family 2, facilitated glucose transporter member 1 Apolipoprotein L 6 Ral guanine nucleotide dissociation stimulator Disks large-associated protein Anion exchange protein Protein yippee-like Interleukin-12 subunit alpha Fibronectin type III domain containing protein COMM domain containing 2 Lymphocyte-specific protein MAP kinase-activating death domain protein Neuropilin-2 Cyclin-T2 WD repeat-containing and planar cell polarity effector protein WD repeat and HMG-box DNA-binding protein Tetratricopeptide repeat domain Roundabout homolog Protocadherin-8 CAP-Gly domain-containing linker protein Ubiquitin conjugation factor ATP-binding cassette sub-family A member 7 P2X purinoceptor 1 LysM and putative peptidoglycan-binding domain-containing protein Exportin</p>
---	--	---

		<p> Vertnin Cytokine receptor-like factor Usp4 protein Kalirin Nucleolar pre-ribosomal-associated protein Epb4.1l2 protein Angiomotin-like protein Homeobox-containing protein Dynein light chain Tctex-type 1 Kinetochores protein Neurocan core protein SNW domain-containing protein WD repeat and SOCS box-containing 1 Protein DEK Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor-like 2 Transcription factor TFIIB component B" homolog Caspase recruitment domain-containing protein Semaphorin-6A Nuclear factor NF-kappa-B p100 subunit Integrin alpha-5 Ubiquitin conjugation factor E4 B Transmembrane and coiled-coil domains protein Nxt2 protein F-box only protein Testin Espin SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily A-like protein Leucine zipper protein Nuclear receptor subfamily 2 group F member 6 TBP-associated factor Pax6 protein Cuedc1 protein Fibroblast growth factor-binding protein BPI fold-containing family A </p>
--	--	---

		<p> member 3 Beta-parvin Zinc finger CW-type PWWP domain protein Thyroid hormone receptor-associated protein Tln2 protein Hepatoma-derived growth factor-related protein Formin-1 F-box/WD repeat-containing protein Growth factor receptor-bound protein ASL1/Sycp1 fusion protein Spectrin beta chain Tubulin-specific chaperone E Protein enabled homolog DENN domain-containing protein Cardiomyopathy-associated protein Band 4.1-like protein Syne/ANC-1 family protein Sorting nexin-27 Heat shock 70 kDa protein CSC1-like protein Single-stranded DNA-binding protein Zinc finger B-box domain-containing protein Leucine-rich repeat and death domain-containing protein H/ACA ribonucleoprotein complex subunit 1 Activating transcription factor 7-interacting protein Copa protein Stomatin-like protein Ankyrin-2 Protein strawberry notch homolog RNA/DNA-binding protein Protocadherin-8 Nuclear fragile X mental retardation-interacting protein Zinc finger FYVE domain-containing protein </p>
--	--	---

		<p> Nurim Ankyrin repeat and SAM domain-containing protein Interferon-activable protein Myogenic factor EH domain-binding protein 1-like protein PRAME family member Enoyl-CoA hydratase domain-containing protein Peroxisome biogenesis factor Focal adhesion kinase FYVE, RhoGEF and PH domain-containing protein Protein phantom Transcription cofactor vestigial-like protein Cyclin-A2 FERM domain-containing protein Unconventional prefoldin RPB5 interactor CMT1A duplicated region transcript 4 protein homolog Microtubule-actin cross-linking factor Selection and upkeep of intraepithelial T-cells protein Apolipoprotein C-IV MICOS complex subunit Mic25 Kinase D-interacting substrate Rhpn2 protein Laminin subunit alpha-5 Filamin-C Tectonic-2 Neuropathy target esterase kinase anchor protein Testis-specific Y-encoded-like protein Sp100 protein Huntingtin-interacting protein 1-related protein Arginine and glutamate-rich protein Delta-like protein Homeobox protein cut-like Cd72 protein Septin-5 </p>
--	--	---

		<p> Tafazzin G-protein-signaling modulator Dystrophin ATP-binding cassette protein Putative DMBT1-like protein Alpha-hemoglobin stabilizing protein G-protein signaling Ankrd11 protein Charged multivesicular body protein Psmc11 protein Keratinocyte proline-rich protein Non-specific lipid-transfer protein Tubulin alpha chain Prolactin-2B1 Side tail fiber HAUS augmin-like complex subunit 1 Macrophage-expressed gene 1 protein Elongator complex protein Pinin Trafficking protein particle complex subunit A-kinase anchor protein LIM domain-containing protein SNO protein Cullin-5 Gap junction protein Ribosomal RNA processing protein Wdr46 protein Ubiquitin-associated protein TD and POZ domain-containing protein 1-like UHRF1-binding protein 1-like Abcc8 protein G2/mitotic-specific cyclin-B3 Required for excision 1-B domain-containing protein Androgen-dependent TFPI-regulating protein Fibrinogen alpha chain Tubulin epsilon and delta complex protein </p>
--	--	---

		<p> Aqp6 protein Probable G-protein-coupled receptor HIRA-interacting protein Contactin-5 Numa1 protein Nebulin Nucleolar GTP-binding protein 14-3-3 protein theta Microfibrillar-associated protein Clavesin-2 Preferentially expressed antigen in melanoma-like protein Lethal(3)malignant brain tumor-like protein B-cell linker protein GPI inositol-deacylase Syndetin Immunoglobulin superfamily-containing leucine-rich repeat protein Upstream-binding factor 1-like protein F-actin-uncapping protein Cytohesin-3 Acyl-CoA-binding protein Phosphatidylinositol-glycan biosynthesis class F protein Syncytin-A Cyclic nucleotide-binding domain-containing protein Golgin-45 Dihydropyrimidinase-related protein Glyoxalase domain-containing protein Nuclear receptor-interacting protein Clustered mitochondria protein Amyloid-beta A4 precursor protein-binding family A member 3 Dynamin-1-like protein Bloom syndrome protein homolog Usherin Nebulette FERM and PDZ domain </p>
--	--	--

		<p> containing Slc24a4 protein Centrin-4 Basic helix-loop-helix domain containing Phospholipid phosphatase- related protein type Sterile alpha motif domain- containing protein 9-like C-terminal-binding protein Polycystin-2 SAP domain-containing ribonucleoprotein Parathyroid hormone-related protein Pgm2l1 protein Arrestin domain-containing protein Rsrc1 protein Tight junction protein Smg6 protein Membrane-spanning 4-domains subfamily A member 13 Cysteine-rich perinuclear theca protein Receptor-transporting protein Epithelial-stromal interaction protein Nucleolar MIF4G domain- containing protein Cytochrome b Adenomatous polyposis coli protein Msx2-interacting protein Nibrin MAM and LDL-receptor class A domain-containing protein MHC H-2K-k protein MAP7 domain-containing protein Neuropeptide-like protein C4orf48 homolog Polyadenylate-binding protein- interacting protein NFX1-type zinc finger- containing protein Vesicle-associated membrane protein </p>
--	--	--

		<p> Double C2 protein beta MutS protein homolog 5 Cytoplasmic polyadenylation element-binding protein Mitochondrial uncoupling protein Neurexin-2 Myh7 protein Bromodomain-containing protein Lpcat2 protein 28S ribosomal protein Small muscle protein Nf2 protein ZZ-type zinc finger-containing protein PHD and RING finger domain-containing protein Small muscle protein Scm polycomb group protein-like Cytospin-B GABA(A) receptor beta-1 subunit INO80 complex subunit E EF-hand and coiled-coil domain-containing protein Sperm autoantigenic protein Jouberin Mucolipin-1 Histone-binding protein Protein unc-13 homolog B Nesprin-1 Nuclear pore complex protein Cell cycle and apoptosis regulator protein C2 calcium-dependent domain-containing Phosphoinositide-3-kinase-interacting protein Contactin-3 Ataxin-7 SAGA-associated factor GREB1-like protein Spermatogenesis associated glutamate (E)-rich protein Protocadherin-16 Junction-mediating and - </p>
--	--	--

		<p> regulatory protein UBX domain-containing protein SAP30-binding protein Arhgap4 protein Carabin Polypyrimidine tract-binding protein Meteorin-like protein GEM-interacting protein Juxtaposed with another zinc finger protein RanBP-type and C3HC4-type zinc finger-containing protein Caseinolytic peptidase B protein Phip protein Membrane-associated transporter protein Nestin Cathepsin W Phosducin-like protein Prickle planar cell polarity protein Mitogen-activated protein kinase-binding protein Vasodilator-stimulated phosphoprotein Testis-specific gene 10 protein Sushi, von Willebrand factor type A, EGF and pentraxin domain-containing protein Junctophilin-1 Small subunit processome component 20 homolog Proline-rich protein Calcium uptake protein Cysteine-rich PDZ-binding protein Ccnb1 protein Catenin beta-1 Neural proliferation differentiation and control protein Protein bicaudal C homolog FH1/FH2 domain-containing protein Ribosomal RNA-processing protein Zinc finger MYM-type protein </p>
--	--	---

		Talin-1 Macoilin
--	--	---------------------

1. Y. Yang, S. Bernardi, H. Song, J. Zhang, M. Yu, J. C. Reid, E. Strounina, D. J. Searles and C. Yu, *Chemistry of Materials*, 2016, **28**, 704-707.
2. Y. Hong, Y. Yao, H. Zhao, Q. Sheng, M. Ye, C. Yu and M. Lan, *Analytical Chemistry*, 2018, **90**, 7617-7625.
3. H. Singh, Gutwein, Rule, Knapik, Moudgil B, Grobmyer S, Brown S. , *Int J Nanomedicine*, 2012, **7**, 2739-2750.
4. J. R. Wiśniewski, A. Zougman, N. Nagaraj and M. Mann, *Nature Methods*, 2009, **6**, 359-362.
5. M. S. Khodadoust, N. Olsson, L. E. Wagar, O. A. W. Haabeth, B. Chen, K. Swaminathan, K. Rawson, C. L. Liu, D. Steiner, P. Lund, S. Rao, L. Zhang, C. Marceau, H. Stehr, A. M. Newman, D. K. Czerwinski, V. E. H. Carlton, M. Moorhead, M. Faham, H. E. Kohrt, J. Carette, M. R. Green, M. M. Davis, R. Levy, J. E. Elias and A. A. Alizadeh, *Nature*, 2017, **543**, 723-727.
6. A. V. Filatov, G. I. Krotov, V. G. Zgoda and Y. Volkov, *J Immunol Methods*, 2007, **319**, 21-33.