

Decoy ODN transfection (in vivo)

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No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	ODN target	ODN dose	HVJ-E dose	dosing strategy	Remarks
1	K. Sumi <i>et al.</i>	<i>Gene Ther.</i> , 11(24), 1763-1771 (2004).	15306843	Mouse	skin, ear lobe	subcutaneous injection	STAT-6	800 µg			
2	N. Matsuda <i>et al.</i>	<i>Mol. Pharmacol.</i> , 67, 1018-1025 (2005).	15576632	Mouse	lung	tail vein	NF-κB	80 µg			
3	S. F Feigl <i>et al.</i>	<i>J. Clin. Invest.</i> , 115, 3057-3071 (2005).	16239967	Mouse	colonic lamina propria	Intrarectal, intraperitoneal	NF-κB	75 µg		i.r :day 0, ip: day 1, 2	
4	H. Nakamura <i>et al.</i>	<i>FEBS Lett.</i> , 580(11), 2717-2722 (2006).	16647058	Mouse	uterus	uterine cavity injection	STAT-3				
5	N. Matsuda <i>et al.</i>	<i>J. Pharmacol. Exp. Ther.</i> , 332(3), 730-737 (2010).	20008488	Mouse	spleen	tail vein	NF-κB	100µg			sepsis induction Decoy ODN
6	T. Watanabe <i>et al.</i>	<i>J. Clin. Invest.</i> , 120(5), 1645-1662 (2010).	20389019	Mouse		intraperitoneal administration	NF-κB			day1,2 before H.pylori infection	
7	T. Kimura <i>et al.</i>	<i>Indian J. Physiol. Pharmacol.</i> , 54(5),27-32 (2010).		Mouse	uterus	uterine cavity injection	NF-κ B , Stat-3, AP-1				
8	Y. Oishi <i>et al.</i>	<i>Am. J. Physiol. Lung Cell Mol. Physiol.</i> , 303(2), 130-140 (2012).	22610350	Mouse	lung	tail vein	cyclic AMP response element binding protein (CREB) decoy ODN	120µg			sepsis induction
9	S. F Feigl <i>et al.</i>	<i>J. Immunol.</i> , 192(8), 3969-3980 (2014).	24634488	Mouse		intrarectal injection	STAT-6				
10	H. Nakamura <i>et al.</i>	<i>J Obstet Gynaecol Res.</i> , 40(6), 1668-1673 (2014).	24888932	Mouse	uterus	uterine cavity injection	STAT-3				

siRNA transfection / miRNA transfection (in vivo)

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	siRNA / miRNA target	siRNA / miRNA dose	HVJ-E dose	dosing strategy	Remarks
1	M. Ito <i>et al.</i>	<i>J.Gene Med.</i> , 7(8), 1044-1052 (2005).	15756713	SCID mouse	i.d transplanted tumor (HeLa)	intratumor injection	Rad51	35µg		day 0,2,4	Day2 CDDP(cisplatin)
2	S. F Feigl <i>et al.</i>	<i>Nature Med.</i> , 12, 99-106 (2006).	16327802	Mouse	lung	intratracheal	IL-13 Receptorα 2	100µg		day0,2,4,6,8, 10,12,14,16, 18,20,22	
3	K. Ishibashi <i>et al.</i>	<i>J. Dent. Res.</i> , 85(12), 1101-1105 (2006).	17122162	Rat	submandibular gland	retrograde ductal injection	rCLCA(Ca2+-dependent cl-channels), CFTR(cystic fibrosis transmembrane conductance regulator)	2 nmol	80µL(2AU)	day 0	
4	S. F Feigl <i>et al.</i>	<i>J. Immunol.</i> , 178, 5859 - 5870 (2007).	17442970	Mouse	colon	intrarectall injection	IL-13 Receptor α2				
5	Y. Nimura <i>et al.</i>	<i>Int. J. Oncol.</i> , 30(6), 1477-1484 (2007).	17487369	BALB/C nude mouse	i.d transplanted tumor (H1299)	intratumor injection	Ku80			day0(1shot) or day 2, 4(2 shots)	siRNA + 4Gy irradiation
7	K. Ishibashi <i>et al.</i>	<i>Am J Physiol Regulatory Integrative Comp Physiol.</i> , 294, 1729-1736 (2008).	18337312	Rat	submandibular gland	retrograde ductal injection	CFTR (cystic fibrosis transmembrane conductance regulator)	2 nmol			

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	siRNA/miRNA target	siRNA /miRNA dose	HVJ-E dose	dosing strategy	Remarks
8	Y. Doi <i>et al.</i>	<i>Proc. Natl. Acad. Sci. USA</i> , 105(24), 8381-8386 (2008).	18550828	SJL/J mouse (ex vivo)	inguinal and popliteal LN cells (enrich in lymphoblasts)	adoptive transfer experimental autoimmune encephalomyelitis (EAE) model in irradiated mice/ i.p. injection of NR4A2 siRNA-treated LN cells	orphan nuclear receptor NR4A2				
9	H. Kato <i>et al.</i>	<i>J. Exp. Med.</i> , 205, 1601-1610 (2008).	18591409	Mouse		intravenously injection					transfect short poly I:C , long poly I:C (purpose :dsRNA-induced IFN- β production)
10	K. Morita <i>et al.</i>	<i>J. Pharmacol. Exp. Ther.</i> , 326, 633-645 (2008).	18448867	Mouse	spinal cord	spinal cord injection	GlyT1, GlyT2, GlyRa3				
11	M. Boirivant <i>et al.</i>	<i>Gastroenterology</i> , 135(5), 1612-1623 (2008).	18765239	Mouse	colon	intrarectal injection	Toll like receptor(TLR)-2	1mg			
12	K. Morita <i>et al.</i>	<i>Pain</i> , 138(3), 525-536 (2008).	18353555	Mouse	spinal cord	spinal cord injection	GlyR α 3				
13	M. Matsuda <i>et al.</i>	<i>Gene Ther.</i> , 16(12), 1465-1476 (2009).	19675593	Mouse	i.d transplanted tumor (human glioblastoma cell), intracranial transplanted tumor (human glioblastoma cell)	intratumor injection	Eg5				
14	N. Matsuda <i>et al.</i>	<i>J. Pharmacol. Exp. Ther.</i> , 332(3), 730-737 (2010).	20008488	Mouse	spleen	tail vein	Histamine H4 Receptors	50 μ g			sepsis induction
15	T. Watanabe <i>et al.</i>	<i>J. Clin. Invest.</i> , 120(5), 1645-1662 (2010).	20389019	Mouse		i.p	Stat1	100 μ g			
16	T.Takahashi <i>et al.</i>	<i>Pain</i> , 150(1), 183-191 (2010).	20546998	Rat		intrathecal(i.t) injection	Ca $_v$ 3.2	9 μ g/1shot			Total siRNA dose:27 μ g
17	E.Tskitishvili <i>et al.</i>	<i>Am. J. Obstet. Gynecol.</i> , 203(4), 364.e6-e12 (2010).	20579953	Mouse	uterus	uterine cavity	RCAS1				
18	T. Fujioka <i>et al.</i>	<i>J. Pharmacol. Sci.</i> , 113(4), 353-361(2010).	20647689	Mouse	transplanted tumor (colon26)	Intratumor injection	bcl-2	40 μ g/1shot	40 μ L/1shot	day 0,2,4,6,8	HRE-CMV sh bcl-2 (Plasmid)
19	L. Chen <i>et al.</i>	<i>Circulation</i> , 122, 910-919 (2010).	20713899	Mouse	dorsal skin	subcutaneous injection	Int6	40 μ g			siRNA-Int6 plasmid
20	R. Naono-Nakayama <i>et al.</i>	<i>Eur. J. Pharmacol.</i> , 670, 448-457(2011).	21958872	Rat	dorsal horn	intrathecal injection	NK1 receptor	45pmol/1shot		day 0	
21	Y. Mitsuishi <i>et al.</i>	<i>Cancer Cell</i> , 22(1), 66-79 (2012).	22789539	Mouse	transplanted tumor(A549)	intratumor injection	Nrf2			day 1,2,3	
22	J. Jin <i>et al.</i>	<i>Am. J. Transl. Res.</i> , 4(3), 302-315 (2012).	22937208	Mouse		intracerebroventricular (ICV) injection	CD45	5 μ g			shRNA
23	E. Kiyohara <i>et al.</i>	<i>Gene Ther.</i> , 19(7), 734-741(2012).	21900962	Mouse	transplanted tumor(B16-F10)	intratumor injection	Rad51	2.5nmol		day 6,8,10	
24	N. Motoyama <i>et al.</i>	<i>Eur. J. Pain</i> , 17(8), 1156-1167 (2013).	23355413	Mouse		intratumor injection	GlyRa3 siRNA				
25	T. Kitayama <i>et al.</i>	<i>Molecular Pain</i> , 9, 23 (2013).	23639135	Mouse	spinal cord	spinal cord injection	Phospholipase C-related but catalytical inactive protein (PRIP)	0.45pmol	5 μ L/1shot		
26	SM.Brunner <i>et al.</i>	<i>Transplant Res.</i> , 2(1), 16 (2013).	24143891	Mouse		intrapitoneal injection	IL-13Ra2				
27	M. Fujiya <i>et al.</i>	<i>Oncogene</i> , 33(40) 4847-4856 (2014).	24166503	Mouse	transplanted tumor (SW620)	intratumor injection	miR-18a [miRNA]			day 0,1,2,3,4,5,6	
28	K. Morita <i>et al.</i>	<i>PLoS One</i> . 9(3), e91746 (2014).	24637403	Mouse	spinal cord	spinal cord injection	PAF receptor	0.45pmol			

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	siRNA/miRNA target	siRNA / miRNA dose	HVJ-E dose	dosing strategy	Remarks
29	M. Imajo <i>et al.</i>	<i>Nature Cell Biology</i> 17,7-19 (2015).	25531778	Mouse	intestinal epithelium	intestinal lumen	Mouse YAP,WWTR1, Stk4(Mst1),Stk3(Mst2)	20µM			
30	LQ. Beach <i>et al.</i>	<i>J. Neuroendocrinol.</i> , (5) 324-334(2015).	25531778	Zebra finch	LMAN(lateral magnocellular nucleus of the anterior nidopallium)	Injections into the LMAN	TBCA siRNA				
31	Y. Nakamura <i>et al.</i>	<i>J. Neurosci. Res.</i> , 93(4) 584-591(2015).	25400139	Mouse	spinal lumbar dorsal horn	intrathecal injection	Connexin 36 (Cx36) siRNA				
32	N. Morioka <i>et al.</i>	<i>Brain Behav. Immun.</i> , 49, 293-310 (2015).	26116449	Mouse	spinal lumbar dorsal horn	intrathecal injection	Connexin 43 (Cx43) siRNA				
33	N. Morioka <i>et al.</i>	<i>Mol. Cell Neurosci.</i> , 72, 72-83 (2016).	26808220	Mouse	spinal lumbar dorsal horn	intrathecal injection	Mouse Per1(period1) siRNA				
34	T. Kitayama <i>et al.</i>	<i>Neurochem. Int.</i> , 101,120-131 (2016).	27818163	Mouse		intrathecal injection	ZnT1(zinc transporter1) siRNA	0.45pmol			
35	LQ. Beach <i>et al.</i>	<i>Brain Res.</i> , 1642, 467-477 (2016).	27086969	Zebra finches	Brain	local injection	TrkB siRNA	30pmol			
36	Y. Hayano <i>et al.</i>	<i>J. Exp. Med.</i> , 213(13), 2949-2966(2016).	27856613	Rat	spinal cord neurons	intrathecal injection	Unc5B siRNA or Netrin-4 siRNA				
37	S. Kon <i>et al.</i>	<i>Nature Cell Biology</i> , 19, 530-541(2017) .	28414314	Mouse	intestinal epithelium	intestinal lumen	PKD4 siRNA				iGT (intestine-specific gene transfer) system
38	L. Zhan <i>et al.</i>	<i>Cell Death Dis.</i> , 8(7) e2949 (2017).	28726776	Rat	hippocampal CA1 region	local injection	UVRAG siRNA				
39	K. Yamamoto <i>et al.</i>	<i>Mol. Pain.</i> 14, 17448069188199422018 (2018).	PMC6305955	Mouse	lumbar enlargement of spinal cord	intrathecal catheter	mouse TRPV2 siRNA	5 ug/10 ul.		day 14, 15 ,16	
40	L. Yang <i>et al.</i>	<i>J.Transl. Med.</i> , 17(1),433 (2019).	31888653	Rat	Basilar Artery	Cisterna magna injection	Cx34 siRNA	5pg/10 ul.			Pretreatment
41	M. Higaki <i>et al.</i>	<i>In Vitro Cell Dev Biol Anim.</i> , 56(3), 222-233 (2020).	32185608	SCID mouse	i.d transplanted tumor (A431)		miR-6887-5p				
42	H. Konishi <i>et al.</i>	<i>Cell Death Dis.</i> , 11(4),245 (2020).	32303675	Mouse	transplanted tumor (HCT116) /AOM-DSS carcinogenesis Mouse model	intratumor injection/ intraperitoneal injection	HNRNP A0 siRNA / HNRNP A0 siRNA or RAB3GAP1				

Protein (antibody) transfection (in vivo)

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	Protein/Antibody	protein dose	HVJ-E dose	dosing strategy	Remarks
1	K. Owada-Makabe <i>et al.</i>	<i>Neurosci. Lett.</i> , 378(1), 18-21 (2005).	15763165	Rat	brain (nucleus tractus solitarius)	local injection (with microinjection)	β-galactosidase	16.7ng	0.003 AU	day 0	
2	E. Yasuoka <i>et al.</i>	<i>J. Mol. Med.</i> , 85(3), 279-288 (2007).	17072578	Mouse	nasal cavity	intranasal	OVA (ovalbumin)	9.1µg		day 35, 42, 49	protein vaccine
3	K. Shintani-Ishida <i>et al.</i>	<i>Biochim.Biophys.Acta.</i> , 1812(7), 743-751 (2011).	21447388	Rat	heart	local injection	anti-PLB antibody				
4	K. Shintani-Ishida <i>et al.</i>	<i>J.Mol. Cell.Cardiol.</i> , 53(2), 233-239(2012).	22659291	Rat	heart	local injection	anti-PLN antibody	6.3 µg /rat	0.3 AU	4 sites (50 µl at each site)	

Plasmid DNA transfection (in vivo)

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	Plasmid DNA	DNA dose	HVJ-E dose	dosing strategy	Remarks
1	H. Nakamura <i>et al.</i>	<i>Mol. Hum. Reprod.</i> , 9(10), 603-609 (2003).	12970398	IVCS mouse(day 1.5 post coitum)	uterus	uterine cavity	LacZ Luciferase	80µg		25µL	After transfection, the cervix was clamped for 10min. HVJ-E-plasmid complex was finally suspended in human tubal fluid(HTF) medium
2	K. Oshima <i>et al.</i>	<i>FASEB J.</i> , 18(1), 212-214 (2003).	14630698	Rat	inner ear	intrathecal injection (cerebrospinal fluid:CSF)	human HGF(Hepatocyte growth factor)			day 0, 14	

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	Plasmid DNA	DNA dose	HVJ-E dose	dosing strategy	Remarks
3	H. Kanzaki <i>et al.</i>	<i>J. Dent. Res.</i> , 83(12), 920-925 (2004).	15557398	Wistar Rat	sub-perosteal area	periodontal tissue	OPG(Osteoprotegerin)			day 0, 3, 7, 10, 14 and 17. 5µL(1shot)	
4	M. Ono <i>et al.</i>	<i>Circulation</i> , 110, 2896-2902 (2004).	15505094	Wistar Rat	lung	left lung (with catheter)	Lac Z,human HGF(Hepatocyte growth factor)	60µg		300µL	pulmonary Hypertension(PH)model mouse(with MCT)
5	H. Nakamura <i>et al.</i>	<i>Biochem. Biophys. Res. Commun.</i> , 321(4), 886-892 (2004).	15358109	Mouse	uterus	uterine cavity	IkBa Mutant	80µg		25µL	After transfection, the cervix was clamped for 10min. HVJ-E-plasmid complex was finally suspended in human tubal fluid(HTF) medium
6	M. Takeno <i>et al.</i>	<i>Clin. Exp. Allergy</i> , 34(6), 965-970 (2004).	15196287	BALB/C mouse	spleen	intravenous injection(tail vein)	mouse txk (a member of Tec family tyrosine kinases)	50µg		day -1,+1,+3,+20,+22,+24	Day 0 = First immunization mouse txk is a member of Tec family tyrosine kinases, acts Th-1-specific transcription factor in the T lymphocytes.)
7	T. Yamazaki <i>et al.</i>	<i>Blood</i> , 104(8), 2345-2352 (2004).	15187024	C57BL/6 mouse	abdominal subcutaneous tissue	abdominal subcutaneous tissue	PILSAP(puromycin-insensitive leucyl-specific aminopeptidase)	20µg	40µL(1AU)		intra-matrigel injection
8	M. Shimamura <i>et al.</i>	<i>Circulation</i> , 109, 424-431 (2004).	14707023	Wistar Rat	brain	cisterna magna injection(with cannula)	human HGF(Hepatocyte growth factor)	400µg		100µL	After removal 100µL of cerebrospinal fluid(CSF),HVJ-E+plasmid complex infused.Rats were placed head down for 30min.
9	T. Itani <i>et al.</i>	<i>Int.J. Mol. Med.</i> , 16, 821-825(2005).	16211250	S D rat (MRP2 mutant)	liver	peripheral portal vein	human MRP2(Multidrug resistance protein 2)	700µg	1mL(25AU)		SD rat (MRP2 mutant; Eisai hyperbilirubinuria rat)
10	T. Matsuoka <i>et al.</i>	<i>Diabetes</i> , 54, 2882-2890 (2005).	16186389	Wistar Rat(STZ induced diabetic Rat)	carotid artery	carotid artery	Tim44(Mammalian translocase of inner mitochondria membrane 44)	20µg	2AU	100µL	Neo,After balloon injury,HVJ-E+plasmid complex incubated in the carotid artery for 20min.
11	M. Ono <i>et al.</i>	<i>J. Thorac. Cardiovasc. Surg.</i> , 129, 740-745 (2005).	15821638	neonatal pig (piglet)	lung	left pulmonary artery with balloon	human HGF(Hepatocyte growth factor)	2mg		20mL (1shot)	HVJ-E-plasmid complex was infused via the catheter, after the occlusion of the left pulmonary artery flow by balloon inflation for 3 minutes.
12	N. Shigemura <i>et al.</i>	<i>Circulation</i> , 111, 1407-1414 (2005).	15781752	SD rat	lung	dorsalis Penis Superficialis vein(via the catheter)	human HGF(Hepatocyte growth factor)	100µg		0.5mL(1shot)	
13	N. Shigemura <i>et al.</i>	<i>Am. J. Respir. Crit. Care Med.</i> , 171, 1237-1245 (2005).	15764723	Rat	lung	dorsalis Penis Superficialis vein	human HGF(Hepatocyte growth factor)	100µg		0.5mL(1shot)	

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	Plasmid DNA	DNA dose	HVJ-E dose	dosing strategy	Remarks
14	H. Futamatsu <i>et al.</i>	<i>Circ. Res.</i> , 96, 823-830 (2005).	15774858	Lewis rat	heart	heart	human HGF(Hepatocyte growth factor)	20µg	200µL(5AU)	day 0,14. (50µL×4sites)	
15	T. Watanabe <i>et al.</i>	<i>J. Clin. Invest.</i> , 120(5), 1645-1662 (2010).	20389019	Mouse		ip	Stat1	100µg			
16	Y. D. Kim <i>et al.</i>	<i>Gene Ther.</i> , 13(3), 216-224 (2006).	16177820	SD rat		liver	pEBAct-ins(human insulin+EBV origin of replication+ the EBV nuclear antigen EBNA-1 +amp-resistance gene)	100µg		1 shot(four sites)	right lobe margin of the liver
17	H. Kanzaki <i>et al.</i>	<i>Gene Ther.</i> , 13(8), 678-685 (2006).	16397507	Wistar rat	palatal periodonal tissue of upper first molar	palatal periodonal tissue of upper first molar	mouse RANKL(receptor activator of nuclear factor kappa B ligand)			day 0, 3, 7, 10, 14 and 17. 5µL(1shot)	
18	H. Suzuki <i>et al.</i>	<i>Cancer Biol. Ther.</i> , 5(11), 1487-1491 (2006).	17102594	Nude KSN/Sic mouse	i.d transplanted tumor (LoVo:human colon cancer cell line)	intratumor injection	N116-cdel2(dominant negative RAS Mutant)	75µg		day 3,10(after transplantation)	1×10 ⁷ LoVo cells were subcutaneously injected into the back of nude mouse.
19	Y. Zhang <i>et al.</i>	<i>J. Am. Soc. Nephrol.</i> , 17, 1090-1101 (2006).	16510762	CD-1 mouse (STZinduced diabetic mouse)	kidney	tail vein injection	LacZ,Tim44(Mammalian translocase of inner mitochondrial membrane 44)	80µg	8 AU	120µL (1shot)	STZ(150mg/kg)induced diabetic mouse
20	M. Ieda <i>et al.</i>	<i>Circulation</i> , 114, 2351-2363(2006).	17101855	diabetic mellitus induced rat	heart	local injection	NGF(Nerve growth factor)	50 µg			
21	T. Hamada <i>et al.</i>	<i>Am. J. Pathol.</i> , 171,872-881 (2007).	17640959	SD rat	spleen	local injection	Oncostatin M (OSM)			day 4, 11,18	Liver Damage Induced by Dimethylnitrosamine(DMN) in Rats
22	T. Watanabe <i>et al.</i>	<i>J. Clin. Invest.</i> , 118(2), 545-559 (2008).	18188453	Mouse	colon	i.p.	NOD-2(Nucleotide-binding oligomerization domain 2)	100µg		day-2,-1,-0,1	MDP(muramyl dipeptide)
23	Y. Mitani <i>et al.</i>	<i>J. Thorac. Cardiovasc. Surg.</i> , 136(1), 142-149 (2008).	18603067	Rat	lung	intratracheal injection	Atrial natriuretic peptide gene and β-galactosidase gene				
24	H. Matsubara <i>et al.</i>	<i>Clin Orthop Relat Res.</i> 466(12), 2962-2672 (2008).	18813894	Japanese white Rabbit(2.5-3kg)	osteotomy gap of rabbit tibia	Subcutaneous injection(S.c)	human HGF(Hepatocyte growth factor)	50µg	5AU	postoperative 2 weeks	final volume of 100µL balance salt solution for S.C
25	M. Okada <i>et al.</i>	<i>Vaccine</i> , 27, 3267-3270 (2009).	19200841	Mouse		Intramuscular (i.m) injection	HSP65(mycobacterial heat shock protein 65) and IL-12(interleukin-12)	50µg			DNA tuberculosis vaccine
26	T. Fujita <i>et al.</i>	<i>Cancer Res.</i> , 69(12), 5142-5150 (2009).	19491278	Mouse		Intramuscular (i.m) injection	TGFR plasmid(TGF-beta type II receptor fused to the human IgG heavy chain)				DNA vaccine C57BL/6 mice subcutaneously bearing E.G7 tumors were administered TGFR plasmid DNA i.m. near the established tumor.

No	Author	Reference	PubMed ID	Host	Target organ / tissue	Delivery route	Plasmid DNA	DNA dose	HVJ-E dose	dosing strategy	Remarks
27	H. Kidoya <i>et al.</i>	<i>Blood.</i> 115(15), 3166-3174 (2010).	20185589	Mouse		quadriceps muscle of the ischemic limb	P-CAG-Lacz, P-CAG-VEGF P-CG-Apelin				
29	M. Tomomura <i>et al.</i>	<i>In Vivo</i> , 25, 157-163 (2011).	21471529	Mouse		Intramuscular (i.m) injection	plasmid(Flag-tagged caldecrin gene)				
30	M. Okada <i>et al.</i>	<i>Clin. Dev. Immunol.</i> , 549281 (2011)	21437226	Mouse		anterior muscles in the tibia	HSP65(mycobacterial heat shock protein 65) and IL-12(interleukin-12)	50µg	100µL	3 times every 3 weeks	DNA tuberculosis vaccine
31	M. S. Salker <i>et al.</i>	<i>Nature Med.</i> , 17, 1509-1513 (2011).	22001908	Mouse	uterus		SGK-S422DpIRES2eGFP	10µg	100µL		
32	N. Zhao <i>et al.</i>	<i>Am.J.Orthod Dentofacial Orthop.</i> , 141, 30-40 (2012).	22196183	Rat		palatal mucosa adjacent to the distal surface of the maxillary right first molar	OPG(Osteoprotegerin)				
33	N. Zhao <i>et al.</i>	<i>Orthod. Craniofac. Res.</i> , 15(1),10-20 (2012).	22264323	Rat		palatal mucosa adjacent to the mesial surface of the upper right first molar	OPG(Osteoprotegerin)				
34	H. Kanzaki <i>et al.</i>	<i>J. Biol. Chem.</i> , 288(32), 23009-23020 (2013).	23801334	Mouse		the midline of the skull located between the eyes	Nrf2 expression plasmid			Day 1, 3, 5, 7, 9	
35	K. Hasegawa <i>et al.</i>	<i>Nature Medicine</i> , 19, 1496-1504 (2013).	24141423	Mouse	Podocyte	tail vein injection	Mouse Claudin-1	50µg		120µL	human NPHS2 (podocin) promoter
36	T. Watanabe <i>et al.</i>	<i>Mucosal Immunology</i> , 7(6), 1312-1325(2014).	24670424	Mouse		intrarectal instillation	FLAG-tagged IRF4				
37	M. Imajo <i>et al.</i>	<i>Nature Cell Biology</i> 17,7-19 (2015).	25531778	Mouse	intestinal epithelium	intestinal lumen		30µg			
38	SL. Lin <i>et al.</i>	<i>Transl Stroke Res.</i> 4, 413-427 (2019).	30191468	Rat		ballon denudation to rat carotid artery	Extracellular superoxide dismutase (EC-SOD)				

Bioimaging (in vivo)

No	Author	Reference	PMID	Host	Target organ / tissue	Delivery route	Magnetic labeling etc	dose	HVJ-E dose	dosing strategy	Remarks
1	J A Flexman <i>et al.</i>	<i>IEEE Trans Nanobioscience</i> , 7(3), 223-232(2008).	18779103	SD Rat	liver, kidney, spleen	intravenously injection	Feridex (superparamagnetic iron oxide particles) + ¹⁸ F-fluoride + poly-L-lysine				PET(Positron Emission Tomography)

Review

No	Author	Reference	PubMed ID	Remarks
1	Y. Kaneda <i>et al.</i>	<i>Mol. Ther.</i> , 6(2), 219-226 (2002).	12161188	
2	Y. Kaneda	<i>Curr. Drug Targets</i> , 4(8), 599-602 (2003).	14577648	
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