



Technical Note:
**Publication on *in vivo* transfection of nucleic acid
with Polyplus-transfection reagents by target organs/tissue**

Reagent used: *in vivo*-jetPEI®, unless specified



Target organ	DNA, oligonucleotides and plasmid-based shRNA	siRNA and RNA
Adipose tissue		<p>siRNA delivery Kim <i>et al.</i> (2017). <i>J Hepatol</i>,67, 349-59 Rat, intravenous injection</p> <p>miRNA, mimic miRNA delivery Giroud <i>et al.</i>, (2016) <i>Sci Rep</i> 6 :28613 Cioffi <i>et al.</i> (2015). <i>Cell Rep</i>,12, 1594-605 Mouse, local injection (Fat Pad)</p>
Airway tract		<p>siRNA delivery Aguilera-Aguirre <i>et al.</i>, (2014) <i>J Immunol</i> 193, 4643</p>
Blood Brain Barrier		<p>siRNA delivery Keaney <i>et al.</i>, (2015) <i>Sci Adv</i> 1(8) :e1500472 Campbell <i>et al.</i>, (2012) <i>Nat Commun</i> 3:849</p>
Blood cells		<p>siRNA delivery Dalli <i>et al.</i>, (2014) <i>EMBO Mol Med</i> 6(1), 27</p>
Blood vessel	<p>shRNA plasmid delivery Tseng <i>et al.</i>, (2015) <i>J Vasc Surg</i></p> <p>Poly(I:C) delivery Asdonk <i>et al.</i>, (2016) <i>J Cell Mol Med</i> 20(9):1696-705</p>	<p>siRNA delivery Paneni <i>et al.</i>, (2014) <i>Atherosclerosis</i> 136(2), 426 Liu <i>et al.</i>, (2013) <i>J Cell Biol</i> 201, 863 Shin <i>et al.</i>, (2013) <i>J Hypertens</i> 31, 1575 Paneni <i>et al.</i>, (2012) <i>Circ Res</i> 111, 278-8 Choi <i>et al.</i>, (2008) <i>J Biol Chem</i> 283, 20186 Wang <i>et al.</i>, (2008) <i>Hypertension</i> 52, 484 Kudo <i>et al.</i>, (2007) <i>Arterioscler Thromb Vasc Biol</i> 27, 1562 Song <i>et al.</i>, (2007) <i>Circulation</i> 116, 1585 Lee <i>et al.</i> (2017). <i>Sci Rep</i>,7, 8207 Rat, intravenous injection</p> <p>miRNA delivery Chang <i>et al.</i> (2017). <i>Int J Mol Sci</i>,18 Rat, subdermal injection</p>



<p>Bladder</p>	<p>DNA delivery by bladder instillation Matouk <i>et al.</i>, (2013) <i>Int J Mol Sci</i> 14, 4298 Amit <i>et al.</i>, (2011) <i>Int J Clin Exp Med</i> 4, 91 Amit and Hochberg (2010) <i>J Transl Med</i> 8, 134 Sidi <i>et al.</i>, (2008) <i>J Urology Supplement</i> 179 Ohana <i>et al.</i>, (2004) <i>Gene Ther Mol Bio</i> 8, 182</p>	<p>miRNA mimic, miRNA inhibitors, antagomiR Sadio <i>et al.</i> (2018). <i>J Innate Immun</i>,10, 14-29 Mouse, intraperitoneal injection</p>
<p>Bone</p>		<p>miRNA mimic, miRNA inhibitors, antagomiR Zhao <i>et al.</i>, (2016) <i>Sci Rep</i> 6 :26611 John <i>et al.</i> (2018). <i>J Mol Med (Berl)</i>,96, 427-44 Mouse, subcutaneous</p> <p>siRNA and STICKY SIRNA delivery Zheng <i>et al.</i>, (2015) <i>Bone</i> 83. 190-196. Capulli <i>et al.</i>, (2015) <i>Mol Ther Nucleic Acids</i> 4:e248 Maurizi <i>et al.</i> (2018). <i>Bone</i>,110, 343-54 Mouse, intraperitoneal, subcutaneous Meng <i>et al.</i> (2017). <i>Neurosci Res</i>,125, 37-45 Rat, intrathecal injection</p>
<p>Brain</p>	<p>DNA delivery Ran <i>et al.</i>, (2015) <i>Neural Regen Res</i> 10. 1258-64 Soroceanu <i>et al.</i>, (2015) <i>Cancer Res</i> 75, 3065-76 Zuckermann <i>et al.</i>, (2015) <i>Nature Commun</i> 6, 7391 Kosaka <i>et al.</i>, (2014) <i>Cancer Immunol Immunother</i> 63, 847-5 Oh <i>et al.</i>, (2013) <i>Eur J Nucl Med Mol Imaging</i> 40, 1607 Lopez-Juarez <i>et al.</i>, (2012) <i>Cell Stem Cell</i> 10, 531-4 Schaffer <i>et al.</i>, (2010) <i>Brain Res</i> 1362, 32 Uchida <i>et al.</i>, (2010) <i>J Neurosci</i> 30, 15007 Wiesner <i>et al.</i>, (2009) <i>Cancer Res</i> 69, 431 Jouvert <i>et al.</i>, (2004) <i>J Neurosci</i> 24, 10716 Wu <i>et al.</i>, (2004) <i>Brain Res</i> 1008, 284 Bacq <i>et al.</i>, (2018). <i>Mol Psychiatry</i> Mouse, stereotaxic injection</p>	<p>siRNA delivery Karatas <i>et al.</i>, (2013) <i>Science</i> 339, 1092 Using jetSI 10 mM Bender <i>et al.</i>, (2013). <i>Neurobiol Dis</i> 54, 297 Using jetSI 10 mM Griggs <i>et al.</i>, (2013). <i>J Neurosci</i> 33, 1734 Using jetSI 10mM Smith <i>et al.</i>, (2012) <i>J Neurosci Methods</i> 203, 398 Using jetSI 10 mM Li <i>et al.</i>, (2012). <i>Addict Biol</i> 17, 392-4 Using jetSI 10 mM Chauvier <i>et al.</i>, (2011) <i>Cell Death Dis</i> 2, e203 Using jetSI 10 mM Carlsson <i>et al.</i>, (2011) <i>Ann Neurol</i> 70, 781 Using jetSI 10 mM Tai <i>et al.</i>, (2011) <i>Embo J</i> 30, 205-2 Using jetSI 10 mM Zhang <i>et al.</i>, (2011). <i>Am J Phys Heart Circ Phys</i> 302 Using jetSI 10mM Badaut <i>et al.</i>, (2011) <i>J Cereb Blood Flow Metab</i> 31, 819 Using INTERFERin® Batassa <i>et al.</i>, (2010) <i>Neurosci Lett</i> 471, 185 Using <i>in vivo</i>-jetPEI® Cakir <i>et al.</i>, (2009) <i>PLoS One</i> 4, e8322 Using jetSI 10 mM Dominska <i>et al.</i>, (2010) <i>J Cell Sci</i> 123, 1183 Using jetSI 10 mM Cheret <i>et al.</i>, (2008) <i>J Neurosci</i> 28, 12039 Using jetSI 10 mM</p>



	<p>shRNA delivery Cruz et al., (2015) <i>J Neurosci</i> 35(36) :12394-403 Sedbazar et al., (2013) <i>Biochem Biophys Res Commun</i> 434, 434 Karatas et al., (2013) <i>Science</i> 339, 1092 Hassani et al., (2007) <i>Nucl Acid Res</i> 35, e65 Criado-Marrero et al. (2017). <i>Learn Mem</i>,24, 145-52 Rat, stereotaxic injection Remaud et al. (2017). <i>Elife</i>,6 Mouse, stereotaxic injection</p> <p>Oligonucleotides delivery Teplyuk et al., (2016) <i>EMBO Mol Med</i> 8(3) :268 De Rivero Vaccari et al., (2015), <i>J Neurochem</i> Zhang et al., (2009), <i>J Neurosci</i> 29, 13823</p>	<p>Froidevaux et al., (2006) <i>EMBO Rep.</i> 7, 1035 Using jetSI 10 mM Guissouma et al., (2006) <i>Neuroscience Letters</i>, 406, 240 Using jetSI 10 mM Kumar et al., (2006) <i>PLoS Med</i> 3, e96 0505 Using jetSI 10 mM Hassani et al, (2005). <i>J Gene Med</i> 7, 198 Using jetSI 10 mM Yamazaki et al. (2018). <i>Neurochem Res</i>,43, 195-204 Using jetSI 10mM</p> <p>Mouse, stereotaxic injection Hashikawa et al. (2017). <i>Sci Adv</i> Mouse, intracerebroventricular Yamazaki et al. (2017). <i>Eur J Pharmacol</i>,799, 103-10 Mouse, intracerebroventricular Gospocic et al. (2017). <i>Cell</i>,170, 748-59 e12 Ant, local injection Rodriguez et al. (2017). <i>Sci Rep</i>,7, 1862 Mouse, intranasal injection Saha et al. (2018). <i>Neurobiol Dis</i>,118, 108-16 Mouse, intranasal injection</p> <p>miRNA delivery Smith et al., (2015), <i>Hum Mol Genet</i> 24, 6721-35</p>
Eye	<p>DNA delivery Yuan et al., (2013) <i>PLoS ONE</i> 8, e6071</p> <p>shRNA delivery by intravitreal injection Zhang et al., (2012) <i>Cell Rep</i> 2(5), 1272 Liao and Yau (2007) <i>Biotechniques</i> 42, 285</p>	<p>siRNA delivery Alarcon-Martinez et al. (2018). <i>Elife</i>,7 Mouse, intravitreal injection</p>
Gallbladder/ Biliary system	<p>DNA delivery Yamada et al., (2015) <i>Hepatology</i> 61.1627-42</p>	
Gastro-intestinal tract	<p>DNA delivery He et al., (2016) <i>PLoS Pathog</i> 12(7) :e1005743 Wirtz et al., (2011) <i>Gastroenterology</i> 141, 1875 Shi et al. (2018). <i>Mucosal Immunol</i>,11, 835-45 Mouse, intraperitoneal injection</p> <p>Oligonucleotides delivery Dabertrand et al., (2010) <i>Eur J Pharmacol</i> 628, 36</p>	<p>siRNA delivery Feng et al., (2011) <i>PLoS ONE</i> 6, e2365</p> <p>miRNA mimic, miRNA inhibitors, antagomiR Nezami et al., (2014) <i>Gastroenterology</i> 146(2), 473</p>



<p>Heart</p>	<p>DNA delivery Zhou et al. (2018). <i>Exp Cell Res</i> Rat, direct injection into the heart Li et al., (2015) <i>Antiviral Res</i> 123 :50-61 Dallabrida et al., (2008) <i>Faseb J</i> 22, 3010 Kurrikoff et al. (2017). <i>Sci Rep</i>,7, 17056 Mouse, tail-vein injection Dong et al. (2017). <i>Arch Biochem Biophys</i>,634, 47-56 Mouse, tail-vein injection</p> <p>DNA oligonucleotide Sarett et al. (2017). <i>Proc Natl Acad Sci U S A</i>,114, E6490-E97 Mouse, intravenous injection</p> <p>mRNA delivery Huang et al., (2015) <i>Mol Pharm</i> 12(3):991-6</p>	<p>siRNA delivery Pei et al., (2016) <i>Free Radic Biol Med</i> 97:408-17 Pei et al., (2015) <i>Free Radic Biol Med</i> 82, 114-21 Cilenti et al., (2011) <i>J Mol Cell Cardiol</i> 50, 652 Ye et al., (2010). <i>Methods Find Exp Clin Pharmacol</i> 32, 391 Kim et al., (2010) <i>Cardiovasc Res</i> 87, 119 Xu et al., (2017). <i>Oxid Med Cell Longev</i>,2017, 6109061 Rat, intramyocardial injection Sabirov et al. (2017). <i>EMBO J</i>,36, 3309-24 Mouse, intravenous injection Hwang et al. (2018). <i>Mediators Inflamm</i>,2018, 6209140 Mouse, direct injection, intraperitoneal injection Kim et al. (2018). <i>J Hum Genet</i>,63, 297-307 Mouse, tail-vein injection</p> <p>miRNA mimic, miRNA inhibitors, antagomiR Du et al., (2016) <i>Free Radic Biol Med</i> 96 :406-17 Jeong et al., (2018). <i>Mol Ther</i>,26, 718-29 Mouse, intravenous injection Lucas et al., (2018). <i>Circ Res</i>,123, 205-20 Mouse, Rat Veliceasa et al., (2015) <i>Vasc Cell</i> 7. 6 Wahlquist et al., (2014) <i>Nature</i> 508(7497), 531</p>
<p>Immune cells</p>	<p>DNA delivery Robbins et al., (2008) <i>Hum Gene Ther</i> 19, 991 Lisziewicz et al., (2006) <i>Curr Drug Deliv</i> 3, 83 Fischer et al., (2017). <i>Sci Transl Med</i> Mouse, intravenous injection O'Neil et al., (2018). <i>Nat Commun</i>,9, 1325 Mouse, subdermal injection</p>	<p>siRNA delivery Zhang et al., (2015) <i>Int J Clin Exp Med</i> 8, 15146-54 Liu et al., (2014) <i>J Virol</i> 88, 4229 Ellermeier et al., (2013) <i>Cancer Res</i> 73(6), 1709 Mostafa Anower et al., (2012) <i>Eur J Pharmacol</i> 688, 76-83 Kim et al., (2012) <i>Free Radic Biol Med</i> 53, 629-4 Lee et al., (2010) <i>J Inflamm (Lond)</i> 7, 31 Besch et al., (2009) <i>J Clin Invest</i> 119, 2399 Poeck (2008) <i>Nature Med</i> 14, 1256 Cubillos-Ruiz (2009) <i>J Clin Invest</i> 119, 2231 Furuya et al. (2017). <i>Carcinogenesis</i>,38, 1218-27 Mouse, intraperitoneal injection Lee et al. (2018). <i>FASEB J</i>,32, 4585-99 Mouse, intravenous injection</p>



	<p>shRNA delivery Nalamolu <i>et al.</i>, (2018). <i>Neuroscience</i>,373, 82-91 Rat, intravenous injection</p> <p>Oligonucleotides delivery Matsumoto <i>et al.</i>, (2015) <i>Nature Commun</i> 6, 6280 Takagi <i>et al.</i>, (2011) <i>Immunity</i> 35, 958 Lee <i>et al.</i>, (2018). <i>Nucleic Acids Res</i>,46, 1635-47 Mouse, intranasal injection</p> <p>miRNA delivery Stickel <i>et al.</i>, (2014) <i>Blood</i> 124, 2586-95. Cubillos-Ruiz <i>et al.</i>, (2012) <i>Cancer Res</i> 72, 1683</p> <p>5'-PPP-dsRNA Chiang <i>et al.</i>, (2015) <i>J Virol</i> 89, 8011-25 Beljanski <i>et al.</i>, (2015) <i>J Virol</i> 89, 10612-24 Coch <i>et al.</i> (2017). <i>Mol Ther</i>,25, 2093-103 Mouse, intravenous injection Fischer <i>et al.</i>, (2017). <i>Sci Transl Med</i> Mouse, intravenous injection</p>	<p>Poly(I:C) delivery Wu <i>et al.</i>, (2011) <i>Cancer Immunol Immunother</i> 60, 1085 Tormo <i>et al.</i>, (2009) <i>Cancer Cell</i> 16, 103 Besch <i>et al.</i>, (2009) <i>J Clin Invest</i> 119, 2399 Sultan <i>et al.</i>, (2018). <i>Cancer Immunol Immunother</i>,67, 1091-103 Mouse, intravenous injection</p>
<p>Immunization</p>	<p>Yu <i>et al.</i>, (2016) <i>Vaccine</i> 34(37) :4399 Chiang <i>et al.</i>, (2015) <i>J Virol</i> 89, 8011 Beljanski <i>et al.</i>, (2015) <i>J Virol</i> 89, 10612 Bivas-Benita <i>et al.</i>, (2013) <i>Mucosal Immunol</i> 6(1), 156 Ochoa-Callejero <i>et al.</i>, (2010) <i>Vaccine</i> 28, 5323 Bivas-Benita <i>et al.</i>, (2010) <i>J Virol</i> 84, 5764 Serba <i>et al.</i>, (2008) <i>Gut</i> 57, 344 Cid-Arregui <i>et al.</i>, (2003) <i>J Virol</i> 77, 4928</p>	



<p>Joints and articulations</p>	<p>siRNA delivery <i>Kramer et al., (2010). Arthritis Rheum 62, 3109</i> (temporomandibular joint)</p>	<p>Poly(I:C) delivery <i>Magnusson et al., (2006) Arthritis Rheum 54, 148</i> <i>Zare et al., (2006) J Leukoc Biol 79, 482</i></p>
<p>Kidney</p>	<p>DNA delivery <i>Zhu et al., (2012). Biochim Biophys Acta 1822, 936-4</i> Intramedullar injection <i>Wang et al., (2010) Hypertension 55, 1129-1136</i> Intramedullar injection <i>Yamada et al., (2005) PNAS 102, 7736</i> Intracortical injection <i>Kurrikoff et al., (2017). Sci Rep,7, 17056</i> Mouse, tail-vein injection</p> <p>Oligonucleotides delivery <i>Yamada et al., (2005) PNAS 102, 7736</i> Intracortical injection <i>Hernandez-Vargas et al., (2005) J Am Soc Nephrol 16, 1673</i> via the renal vein</p> <p>shRNA delivery <i>Wang et al., (2014) Am J Physiol Renal Physiol 306, F1236.</i> Injection into kidney <i>West et al., (2014) Exp Physiol 99, 816-2.</i> Injection into renal artery <i>Zhu et al., (2014) Am J Hypertens 27, 107-1.</i> Infusion into the renal medulla <i>Liu et al., (2008) Physiological genomics 36, 52</i> Renal infusion</p>	<p>siRNA delivery <i>Li et al., (2012) Ren Fail 34(10), 1288</i> Injection into renal capsule <i>Ji et al., (2012) Genomics Inform 10, 40-3</i> Tail-vein injection <i>Sarett et al., (2017). Proc Natl Acad Sci U S A,114, E6490-E97</i> Mouse, intravenous injection</p> <p>miRNA delivery <i>Morishita et al., (2015) Int J Nanomedicine 10, 3475-88</i> <i>Sadio et al., (2018). J Innate Immun,10, 14-29</i> Mouse, intraperitoneal injection</p>



<p>Liver</p>	<p>DNA delivery Li <i>et al.</i>, (2014) <i>J Clin Invest</i> 124, 3241. Intrabiliary injection Nakamura <i>et al.</i>, (2013) <i>Biomed Res Int</i> 2013, 92879. Tail-vein injection Wong <i>et al.</i>, (2011) <i>J Control Release</i> 150, 298 via the superior temporal vein Nishikawa <i>et al.</i>, (2008) <i>Hum Gene Ther</i> 19, 1009 via the mesenteric vein Timchenko <i>et al.</i>, (2006) <i>J Biol Chem</i> 281, 32806. Tail-vein injection Kurrikoff <i>et al.</i> (2017). <i>Sci Rep</i>,7, 17056 Mouse, tail-vein injection Han <i>et al.</i> (2018). <i>J Physiol</i>,596, 3603-16 Rat, intravenous injection Gobbetti <i>et al.</i> (2017). <i>Proc Natl Acad Sci U S A</i>,114, 3963-68 Mouse, intravenous injection Dong <i>et al.</i> (2017). <i>Arch Biochem Biophys</i>,634, 47-56 Mouse, tail-vein injection shRNA delivery Paranjpe <i>et al.</i>, (2010) <i>Am J Pathol</i> 176, 2669 Via the mesenteric vein Williams <i>et al.</i>, (2010) <i>Am J Pathol</i> 176, 2732 Via the femoral vein George and Tsutsumi (2007), <i>Gene Ther</i> 14, 890 IP injection Paranjpe <i>et al.</i>, (2007) <i>Hepatology</i>, 45, 1471 via the mesenteric vein Mini-circle expressing miRNA Wu <i>et al.</i> (2017). <i>J Hepatol</i>,66, 816-24 Mouse, intravenous injection Zhang <i>et al.</i> (2018). <i>Metabolism</i>,85, 183-91 Mouse, intravenous injection</p>	<p>siRNA delivery Kim <i>et al.</i>, (2016) <i>Br J Pharmacol</i> 173(6) : 1045-57 Kang <i>et al.</i>, (2016) <i>Biochim Biophys Acta</i> 1861 :1025-35 Lee <i>et al.</i>, (2015) <i>Nat Commun</i> 6 :10154 Kim <i>et al.</i>, (2014) <i>FEBS J</i> doi :10.1111. Kim <i>et al.</i>, (2014) <i>J Biol Chem</i> 189(39), 27065. Chang <i>et al.</i>, (2014) <i>Hepatology</i> 60(4), 1251. Jin <i>et al.</i>, (2013) <i>Cell Reports</i> 3, 1-13 Xia <i>et al.</i>, (2012) <i>J Viral Hepat</i> 19, 509 Using <i>in vivo</i>-jetPEI®-Gal Ebert <i>et al.</i>, (2011) <i>Gastroenterology</i> 141, 696 Sarett <i>et al.</i> (2017). <i>Proc Natl Acad Sci U S A</i>,114, E6490-E97 Mouse, intravenous injection Zhao <i>et al.</i> (2017). <i>Sci Rep</i>,7, 46272 Mouse, intravenous injection Kim <i>et al.</i> (2017). <i>J Hepatol</i>,67, 349-59 Rat, intravenous injection Stein <i>et al.</i> (2017). <i>J Clin Invest</i>,127, 583-92 Mouse, intravenous injection Jung <i>et al.</i> (2018). <i>Mol Cell Endocrinol</i>,470, 26-33 Mouse, intravenous injection Zhang <i>et al.</i> (2018). <i>Int J Pharm</i>,547, 537-44 Mouse, intravenous injection Non coding RNA delivery Chen <i>et al.</i>, (2015) <i>Nucleic Acids Res.</i> 43(7):3857-69 miRNA mimic, miRNA delivery Guan <i>et al.</i>, (2015) <i>Int J Biol Sci.</i> 11(11) :1257-68 Using <i>in vivo</i>-jetPEI®-Gal Jilek <i>et al.</i> (2017). <i>Drug Metab Dispos</i>,45, 512-22 Mouse, intravenous injection Kim <i>et al.</i> (2018). <i>Cell Death Dis</i>,9, 721 Mouse, intraperitoneal injection Zhang <i>et al.</i> (2018). <i>J Hepatol</i>, 10.1016/j.jhep.2018.08.026 Mouse, intravenous injection 5'pppRNA delivery Liu <i>et al.</i>, (2016) <i>J Virol</i> 90, 9406</p>
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<p>Lung</p>	<p>DNA delivery Stellari <i>et al.</i>, (2016) <i>J Transl Med</i> 14(1) :226 Elias <i>et al.</i>, (2016) <i>Sci Rep</i> 6 :24971 Stellari <i>et al.</i>, (2015) <i>J Transl Med</i> 13, 251 Osorio <i>et al.</i>, (2013) <i>Cell Commun Signal</i> 11, 19. Stefanov <i>et al.</i>, (2013) <i>PLoS Genetics</i> 8, e1003203 Aich <i>et al.</i>, (2012) <i>Nat Commun</i> 3, 877 Stellari <i>et al.</i>, (2012) <i>PLoS ONE</i> 7, e3971 Ansaldi <i>et al.</i>, (2011) <i>PLoS ONE</i> 6, e2509 Lin <i>et al.</i>, (2011) <i>Biomaterials</i> 32, 1978 Hu <i>et al.</i>, (2010) <i>J Gene Med</i> 12, 276 Gregory <i>et al.</i>, (2009) <i>Vaccine</i> 27, 5299 Poeck <i>et al.</i>, (2008) <i>Nature Med</i> 14, 1256 Liu <i>et al.</i>, (2006) <i>Mol Ther.</i> 13, 1006 Liu <i>et al.</i>, (2006) <i>Am J Respir Crit Care Med</i> 173, 566 Liu <i>et al.</i>, (2006) <i>Faseb J</i> 20, 2384 Ge <i>et al.</i>, (2004) <i>PNAS.</i> 101, 8676 Kurrikoff <i>et al.</i> (2017). <i>Sci Rep</i>,7, 17056 Mouse, tail-vein injection Chen <i>et al.</i> (2017). <i>Int Immunopharmacol</i>,44, 9-15 Mouse, intranasal injection Dong <i>et al.</i> (2017). <i>Arch Biochem Biophys</i>,634, 47-56 Mouse, tail-vein injection Kim <i>et al.</i> (2018). <i>Appl Microbiol Biotechnol</i>,102, 105-15 Mouse, intranasal injection Chen <i>et al.</i> (2018). <i>FASEB J</i>, fj201701506RR Mouse, tail-vein injection shRNA delivery Jiao <i>et al.</i>, (2015) <i>Nat Immunol</i> 16(3) :246-57 Andre <i>et al.</i>, (2015) <i>Mol Med Rep</i> 12(6) :8320-6 Wang <i>et al.</i>, (2011) <i>Arch Biochem Biophys</i> 508, 93</p>	<p>siRNA delivery Frye <i>et al.</i>, (2015) <i>J Exp Med</i> 212. 2267-87 Long <i>et al.</i>, (2015) <i>Respir Res</i> 16. 11. Zhang <i>et al.</i>, (2015) <i>Int J Clin Exp Med</i> 8, 15146-54. Zhou <i>et al.</i>, (2014) <i>Nat Commun</i> 5, 3619. Kim <i>et al.</i>, (2014) <i>J Biol Chem</i> 189(39), 27065. Chang <i>et al.</i>, (2014) <i>Hepatology</i> 60(4), 1251. Lin <i>et al.</i>, (2012) <i>J Virol</i> 86, 10359. Lively <i>et al.</i>, (2008) <i>J Allergy Clin immunol</i> 121, 88 Liu <i>et al.</i>, (2006) <i>Faseb J</i> 20, 2384 Sarett <i>et al.</i> (2017). <i>Proc Natl Acad Sci U S A</i>,114, E6490-E97 Mouse, intravenous injection Zha <i>et al.</i> (2017). <i>PLoS One</i>,12, e0177964 Mouse, intravenous injection Kim <i>et al.</i> (2018). <i>Exp Mol Med</i>,50, e444 Nude mice, intranasal injection Chen <i>et al.</i> (2018). <i>FASEB J</i>, fj201701506RR Mouse, tail-vein injection Sisti <i>et al.</i> (2018). <i>Sci Signal</i> Mouse Zhang <i>et al.</i> (2018). <i>Int J Pharm</i>,547, 537-44 Mouse, intravenous injection</p> <p>RNA delivery Ranjan <i>et al.</i>, (2010) <i>Virology</i> 7, 102 Kaczmarek <i>et al.</i> (2016). <i>Angew Chem Int Ed Engl</i>,55, 13808-12 Mouse, intravenous injection</p> <p>miRNA mimic, miRNA inhibitors, antagomiR Chen <i>et al.</i>, (2016) <i>J Cell Physiol</i> 231(10) :2236 Li <i>et al.</i>, (2016) <i>Nat Microbiol</i> 1(10) :16132 Li <i>et al.</i> (2018). <i>Sci Signal</i> Mouse, intravenous injection</p> <p>5'pppRNA delivery Liu <i>et al.</i>, (2016) <i>J Virol</i> 90, 9406</p>
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	Zeng <i>et al.</i> , (2010) <i>Microvasc Res</i> 80, 116 Jain <i>et al.</i> (2018). <i>Allergy</i> Mouse, intratracheal injection, tail-vein injection	
Mammary Gland		siRNA delivery Arnandis <i>et al.</i> , (2014) <i>Biochem J</i> 459, 355-6.
Muscle	shRNA delivery Lin <i>et al.</i> (2018). <i>Mol Neurobiol</i> Mouse, intramuscular injection	siRNA delivery Kim <i>et al.</i> (2017). <i>J Hepatol</i> ,67, 349-59 Rat, intravenous injection Jung <i>et al.</i> (2018). <i>Exp Mol Med</i> , 50(9):122 Mouse, intravenous injection miRNA delivery Hsu <i>et al.</i> , (2016) <i>J Cell Mol Med</i> 21(3):519
Lymph node	shRNA delivery Jiao <i>et al.</i> , (2015) <i>Nat Immunol</i> 16(3) :246-57	
Nerve/ Spinal cord	DNA delivery Cabrera <i>et al.</i> , (2015), <i>PLoS Pathog</i> 11(1):e1004571 shRNA delivery Cheng <i>et al.</i> , (2015) <i>Pain</i> 156(11):2295-309 Almutiri <i>et al.</i> , (2018). <i>Sci Rep</i> ,8, 10707 Rat, injection into the Dorsal Root Ganglion Fujita <i>et al.</i> , (2018). <i>Nat Commun</i> ,9, 433 Mouse, injection into the intra-subarachnoid space	siRNA delivery Xie <i>et al.</i> , (2015) <i>Neuroscience</i> 291. 317-30 Barbosa <i>et al.</i> , (2015) <i>Mol Pain</i> 11 :60 Intrathecal injection Jin <i>et al.</i> , (2014) <i>J Neurosci Res</i> 92, 1690. Intrathecal injection Kramer <i>et al.</i> , (2014) <i>Neuroscience</i> 278, 144-5. Infusion into trigeminal ganglion Acosta <i>et al.</i> , (2014) <i>J Neurosci</i> 34, 1494. Intradermal injection Kramer <i>et al.</i> , (2013). <i>Neuroscience</i> 245, 1-11. Infusion into Trigeminal Ganglia Xie <i>et al.</i> , (2013). <i>Pain</i> 154, 1170. Injection into Dorsal Root Ganglion Xie <i>et al.</i> , (2017). <i>eNeuro</i> ,4 Rat, Injection into Dorsal Root Ganglion Chang <i>et al.</i> , (2016). <i>Sci Rep</i> ,6, 35612 Rat, intrathecal injection, injection into Dorsal Root Ganglion Xie <i>et al.</i> , (2012) <i>Neurosci Lett</i> 515, 61-5 Intrathecal injection Tulleuda <i>et al.</i> , (2011) <i>Mol Pain</i> 7, 30 Intrathecal injection Kiguchi <i>et al.</i> , (2010). <i>Pain</i> 149, 305 Perineural injection Patte-Mensah <i>et al.</i> , (2010) <i>Pain</i> 150, 522 Paravertebral injection Liu, S., <i>et al.</i> , (2010) <i>Brain Res</i> 1346, 213 Intrathecal injection Lan <i>et al.</i> , (2010) <i>Molecular Pain</i> 6, 2 Intrathecal injection



<p>Ovary</p>	<p>shRNA delivery Li <i>et al.</i>, (2015) <i>Cell Physiol Biochem</i> 37(3) :911-20</p>	
<p>Pancreas</p>	<p>DNA delivery Buscail <i>et al.</i>, (2015) <i>Mol Ther</i> 23. 779-89. (Human)</p>	<p>siRNA delivery Kim <i>et al.</i>, (2014) <i>J Biol Chem</i> 189(39), 27065 Kim <i>et al.</i>, (2013) <i>Cell Signal</i> 25, 2348 Kuroda <i>et al.</i>, (2017). <i>J Clin Invest</i>,127, 3496-509 Mouse, intrapancreatic injection</p>
<p>Skin</p>	<p>DNA delivery Zhang <i>et al.</i>, (2014) <i>Free Radic Biol Med</i> 69, 96-10. SC injection Angelos <i>et al.</i>, (2011) <i>Arch Facial Plast Surg</i> 13, 185-9 Topical application McKnight <i>et al.</i>, (2008) <i>Ortolaryngol Head Neck Surg</i> 139, 2459 Topical application</p> <p>DNA delivery by topical application to target dendritic cells Liszewicz <i>et al.</i>, (2006) <i>Curr Drug Deliv</i> 3, 83 using <i>in vivo</i>-jetPEI®-Man Liszewicz <i>et al.</i>, (2005) <i>J Invest Dermatol.</i> 124, 160 using <i>in vivo</i>-jetPEI®-Man Liszewicz <i>et al.</i>, (2005) <i>Aids.</i> 19, 35 using <i>in vivo</i>-jetPEI®-Man</p>	<p>siRNA delivery Jin <i>et al.</i>, (2012) <i>J Dermatol Sci</i> 67, 88-94 intravenous injection Murase <i>et al.</i>, (2009) <i>J Biol Chem</i> 284, 4343 Subepidermal injection Haskins <i>et al.</i>, (2017). <i>Mol Cell Neurosci</i>,83, 13-26 Rat, intradermal injection Yan <i>et al.</i>, (2017). <i>Wound Repair Regen</i>,25, 933-43 Mouse, topical application</p>
<p>Spleen</p>	<p>DNA delivery Lee <i>et al.</i>, (2010) <i>J Inflamm (Lond)</i> 7, 31 Kurrikoff <i>et al.</i>, (2017). <i>Sci Rep</i>,7, 17056 Mouse, tail-vein injection Luo <i>et al.</i>, (2017). <i>Nat Nanotechnol</i>,12, 648-54 Mouse, subcutaneous injection</p> <p>shRNA delivery Jiao <i>et al.</i>, (2015) <i>Nat Immunol</i> 16(3) :246-57</p>	<p>siRNA delivery Xiao <i>et al.</i>, (2016) <i>Nat Med</i> 22(8):906-14 Chen <i>et al.</i>, (2011) <i>Mol Immunol</i> 48, 1532 Sarett <i>et al.</i>, (2017). <i>Proc Natl Acad Sci U S A</i>,114, E6490-E97 Mouse, intravenous injection</p> <p>5'pppRNA delivery Liu <i>et al.</i>, (2016) <i>J Virol</i> 90, 9406</p>



	<p>DNA oligonucleotide delivery Sarett <i>et al.</i>, (2017). <i>Proc Natl Acad Sci U S A</i>,114, E6490-E97 Mouse, intravenous injection</p>	
<p>Testis</p>	<p>DNA delivery Xia <i>et al.</i>, (2013) <i>J Pediatr Surg</i> 48, 2140 Li <i>et al.</i>, (2018). <i>Am J Physiol Endocrinol Metab</i> Rat, intratesticular injection</p> <p>shRNA delivery Rotgers <i>et al.</i>, (2014) <i>Cell Death Dis</i> 5, e1274</p>	<p>siRNA delivery Li <i>et al.</i>, (2016) <i>Endocrinology</i> 157(7):2894 Gao <i>et al.</i>, (2016) <i>Sci Rep</i> 6 :28589 Chen <i>et al.</i>, (2016) <i>Endocrinology</i> 157(5):2140-59 Ma <i>et al.</i>, (2015) <i>Sci Rep</i> 5. 8894. Wen <i>et al.</i>, (2018). <i>Cell Death Dis</i>,9, 208 Rat, intratesticular injection Wen <i>et al.</i>, (2018). <i>Am J Physiol Endocrinol Metab</i> Rat, intratesticular injection Chen <i>et al.</i>, (2018). <i>Cell Death Dis</i>,9, 340 Rat, intratesticular injection</p>
<p>Tooth</p>		<p>antimiR delivery Khan <i>et al.</i>, (2013) <i>Eur J Oral Sci</i> 121. 303-12.</p>
<p>Tumors</p>	<p>DNA delivery Kitano <i>et al.</i>, (2016) <i>Onco Targets Ther</i> 9 :503-16 Gupta <i>et al.</i>, (2016) <i>Tumor Biol</i> 37(9) :12089 Gupta <i>et al.</i>, (2016) <i>Virus Res</i> 213:289-98 Rama <i>et al.</i>, (2015) <i>Int J Mol Sci</i> 16. 12601-15 Li <i>et al.</i>, (2015) <i>J Cancer Res Clin Oncol</i> 141. 1909-20 Ronald <i>et al.</i>, (2015) <i>Proc Natl Acad Sci USA</i> 112. 3068-73 Zhong <i>et al.</i>, (2015) <i>J Biol Chem</i> 290:8876-87 Hsieh <i>et al.</i>, (2015) <i>Mol Imaging Biol</i> 17(6):802-10 Bhatnagar <i>et al.</i>, (2014) <i>Cancer Res</i> 74(20), 5772 Ma <i>et al.</i>, (2013) <i>Mol Cancer Ther</i> 12, 286-9 Rodriguez <i>et al.</i>, (2013) <i>Biochem Pharmacol</i> 86, 1541 Kitano <i>et al.</i>, (2012) <i>J Gene Med</i> 14, 642-5 Hine <i>et al.</i>, (2011) <i>Mol Ther</i> Amit <i>et al.</i>, (2011) <i>Int J Clin Exp Med</i> 4, 91 Amit and Hochberg (2010) <i>J Transl Med</i> 8, 134 Scaiewicz <i>et al.</i>, (2010) <i>J Oncol</i> 2010, 17817</p>	<p>siRNA delivery Hirahata <i>et al.</i>, (2016) <i>Cancer Med</i> 5(5):892 Albino <i>et al.</i>, (2016) <i>Cancer Res</i> 76, (12), 3629 Park <i>et al.</i>, (2015) <i>Gene Ther</i> 22, 325-32 Wang <i>et al.</i>, (2014) <i>Apoptosis</i> 19, 643-5 Kurioka <i>et al.</i>, (2014) <i>Sci Rep</i> 4, 6111 Zhang <i>et al.</i>, (2014) <i>BMC Cancer</i> 14, 31 Chen <i>et al.</i>, (2014) <i>Br J Cancer</i> 110, 1014 Ellermeier <i>et al.</i>, (2013) <i>Cancer Res</i> 73(6), 1709 Wang and Gartel (2011) <i>Oncotarget</i> 2, 1218 Busser <i>et al.</i>, (2010) <i>Mol Ther</i> 18, 528 Zhang <i>et al.</i>, (2010) <i>Ann Surg Oncol</i> 16, 2617 Besch <i>et al.</i>, (2009) <i>J Clin Invest</i> 119, 2399 Storci (2008) <i>J Pathol</i> 214, 25 Poock (2008) <i>Nature Med</i> 14, 1256 Lefort <i>et al.</i>, (2007) <i>Genes Dev</i> 21, 562-7 Goodwin <i>et al.</i>, (2010) <i>Cancer Res</i> 70, 2932</p>



<p>Kang <i>et al.</i>, (2009) <i>BMC Cancer</i> 9, 126 Stone <i>et al.</i>, (2009) <i>PLoS One</i> 4, e7334 Garg <i>et al.</i>, (2009) <i>Cancer Gene Therapy</i> 17, 155 Prados <i>et al.</i>, (2009) <i>Exp Dermatol</i> 19, 363 Kang <i>et al.</i>, (2009) <i>BMC Cancer</i> 9, 126 Ortiz <i>et al.</i>, (2009) <i>J Mol Med</i> 87, 899 Jeudy <i>et al.</i>, (2008) <i>Cancer Gene Ther</i> 15, 742 Chumakova <i>et al.</i>, (2008) <i>Cancer Lett</i> 261, 215 Hua <i>et al.</i>, (2007) <i>Cancer Gene Ther</i> 14, 815 Paranjpe <i>et al.</i>, (2007) <i>Hepatology</i>, 45, 1471 Caldas <i>et al.</i>, (2006) <i>Mol Cancer Ther</i> 5, 693 Lavergne <i>et al.</i>, (2004) <i>J Immunol</i> 173, 3755 Ohlfest <i>et al.</i>, (2004) <i>Mol Ther</i> 10, 260 Lavergne <i>et al.</i>, (2003) <i>Cancer Res</i> 63, 7468 Xu <i>et al.</i>, (2017). <i>J Hematol Oncol</i>,10, 132 Mouse, intratumoral injection Krzywinska <i>et al.</i>, (2017). <i>Nat Commun</i>,8, 1597 Mouse, intratumoral injection Vial <i>et al.</i>, (2018). <i>Cell Death Differ</i> Mouse, intratumoral injection</p> <p>Dbait delivery Berthault <i>et al.</i>, (2011) <i>Cancer Gene Ther</i> 18, 695 Quanz <i>et al.</i>, (2009) <i>Clin Cancer Res</i> 15, 308</p> <p>shRNA delivery Hu <i>et al.</i>, (2014) <i>Int J Clin Exp Pathol</i> 7, 2143 Zhang <i>et al.</i>, (2009) <i>Ann Surg Onc</i> 16, 2617 Niola <i>et al.</i>, (2006) <i>Cancer Biol Ther</i> 5, 174 Hua <i>et al.</i>, (2007) <i>Cancer Gene Ther</i> 14, 815</p> <p>Decoy oligonucleotide delivery Canello <i>et al.</i>, (2014) <i>PLoS One</i> 9(12) :e113854</p>	<p>Sarett <i>et al.</i>, (2017). <i>Proc Natl Acad Sci U S A</i>,114, E6490-E97 Mouse, intravenous injection Hsu <i>et al.</i>, (2017). <i>J Cancer</i>,8, 1378-94 Mouse, intratumoral injection Peng <i>et al.</i>, (2017). <i>J Exp Clin Cancer Res</i>,36, 30 Mouse, intratumoral injection Yang <i>et al.</i>, (2017). <i>Tumour Biol</i>,39, 1010428317711658 Mouse, intratumoral injection Vilgelm <i>et al.</i>, (2017). <i>EBioMedicine</i>,24, 43-55 Mouse, intratumoral injection Ji <i>et al.</i>, (2018). <i>Oncol Rep</i>,40, 1885-96 Mouse, intratumoral injection Zhang <i>et al.</i>, (2018). <i>Int J Pharm</i>,547, 537-44 Mouse, intravenous injection So <i>et al.</i>, (2018). <i>Oncogene</i> Mouse, intratumoral injection Boudria <i>et al.</i>, (2018). <i>Oncogene</i> Using <i>in vivo</i>-jetPEI®-Gal Mouse, intraperitoneal and subcutaneous injection</p> <p>DNA and siRNA codelivery Francis <i>et al.</i>, (2014) <i>Mol Ther</i> 22(9), 1643 Taylor <i>et al.</i>, (2012) <i>Mol Ther</i> 20, 1305</p> <p>Poly(I:C) delivery Duewell <i>et al.</i>, (2014) <i>Cell Death Differ</i> 21, 1825 Bhoopathi <i>et al.</i>, (2014) <i>Cancer Res</i> 74, 6224 Wu <i>et al.</i>, (2011) <i>Cancer Immunol Immunother</i> 60, 1085 Tormo <i>et al.</i>, (2009) <i>Cancer Cell</i> 16, 103 Lee <i>et al.</i> (2017). <i>Mol Ther</i>,25, 1295-305 Mouse, intratumoral injection</p> <p>miRNA, mimic miRNA, anti-miR and pre-miRNA delivery An <i>et al.</i>, (2016) <i>Biochim Biophys Acta</i> 1862(10), 1926 Shi <i>et al.</i>, (2015) <i>Cancer Res</i> 75, 5309-17 Wang <i>et al.</i>, (2015) <i>J Pharmacol Exp Ther</i> 354, 131-41</p>
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<p>Uterus</p>		<p> miRNA, mimic miRNA delivery <i>Sirohi et al. (2018). J Steroid Biochem Mol Biol,178, 272-82</i> Rat, intrauterine injection <i>Sahin et al. (2018). J Cell Mol Med</i> Mouse, intraperitoneal injection </p>