

Chariot™ Protein Delivery Reagent Citations

Chariot™

293, Flp-In cells (human, embyronic kidney)

Apaja *et al.* "Luteinizing Hormone Receptor Ectodomain Splice Variant Misroutes the Full-Length Receptor into a Subcompartment of the Endoplasmic Reticulum." (2006) *Molecular Biology of the Cell* 17(5):2243-2255.

407 cells (human, intestine)

van der Wijk *et al.* "Increased Vesicle Recycling in Response to Osmotic Cell Swelling." (2003) *Journal of Biological Chemistry* 278(41):40020-40025.

Adrenal Gland slices (mouse)

Chan et al. "Adrenal Chromaffin Cells Exhibit Impaired Granule Trafficking in NCAM Knockout Mice." (2005) *Journal of Neurophysiology* 94(2):1037-1047.

AGS cells (human, stomach adenocarcinoma)

Nossa *et al.* "Activation of the Abundant Nuclear Factor Poly(ADP-ribose) Polymerase-1 by Helicobacter pylori." (2009) *Proc. Natl. Acad. Sci. USA* 106(47):19998-20003.

Alveolar cells (mouse, lung)

Aoshiba *et al.* "Senescence Hypothesis for the Pathogenetic Mechanism of Chronic Obstructive Pulmonary Disease." (2009) *Proceedings of the ATS* 6(7):596-601.

Amo (rat and mouse)

Lasbury *et al.* "Effects of Decreased Calmodulin Protein on the Survival Mechanisms of Alveolar Macrophages during Pneumocystis Pneumonia." (2009) *Infection and Immunity* 77(8):3344-54.

Aortic rings (rat)

Lima *et al.* "O-GlcNAcylation Contributes to Augmented Vascular Reactivity Induced by Endothelin 1." (2010) *Hypertension* 55(1):180-188.

Aortic tissue (rat, primary)

Giachini *et al.* "Increased Activation of Stromal Interaction Molecule-1/Orai-1 in Aorta From Hypertensive Rats: A Novel Insight Into Vascular Dysfunction." (2009) *Hypertension* 53(2):409-16.

B cells (human, Hodgkin's)

Kashkar *et al.* "XIAP-mediated Caspase Inhibition in Hodgkin's Lymphoma-derived B Cells." (2003) *Journal of Experimental Medicine* 198(2):341-347.

BAEC (bovine, aortic endothelial cells)

Liu *et al.* "Dehydroepiandrosterone Protects Vascular Endothelial Cells Against Apoptosis through a $G\alpha$ i-Protein-Dependent Activation of Phosphatidylinositol 3-Kinase/Akt and Regulation of Anti-apoptotic Bcl-2 Expression." (2007) *Endocrinology* 148(7):3068-3076.

Bovine Zygote

Rawe *et al.* "Profilin and Actin-related Proteins Regulate Microfilament Dynamics During Early Mammalian Embryogenesis." (2006) *Human Reproduction* 21(5):1143-1153.



Brain and fetal tissue (mouse, primary)

Tagami *et al.* "Regulation of Notch Signaling by Dynamic Changes in the Precision of S3 Cleavage of Notch-1." (2008) *Molecular and Cellular Biology* 28(1):165-176.

C2C12 cells (mouse, muscle myoblast)

Tassa *et al.* "Class III Phosphoinositide 3-Kinase-Beclin1 Complex Mediates the Amino Acid-dependent Regulation of Autophagy in C2C12 Myotubes." (2003) *Biochemical Journal* 376(Pt. 3):577-586.

Zhang et al. "Effect of Cyclic Stretch on β 1D-Integrin Expression and Activation of FAK and RhoA." (2007) Am. J. Physiol. Cell Physiol. 292(6):C2057-C2069.

Cardiomyocytes (rat)

Mizukami et al. "ERK1/2 Regulates Intracellular ATP Levels through α -Enolase Expression in Cardiomyocytes exposed to Ischemic Hypoxia and Reoxygenation." (2004) *Journal of Biological Chemistry* 279(48):50120-50131.

Chariot Profile

Boguslavsky et al. "Delivering DNA with Transfection Perfection." (2003) Genomics & Proteomics 3(2):38-40.

CHO cells (Chinese hamster, ovary)

Lee et al. "The Hexapeptide Inhibitor of Galbeta 1,3GalNAc-specific alpha 2,3-Sialyltransferase as a Generic Inhibitor of Sialyltransferases." (2002) *Journal of Biological Chemistry* 277(51):49341-49351.

Chromaffin cells (mouse, adrenal medullae primary)

Doreian *et al.* "Cortical F-Actin, the Exocytic Mode, and Neuropeptide Release in Mouse Chromaffin Cells Is Regulated by Myristoylated Alanine-rich C-Kinase Substrate and Myosin II." (2009) *Molecular Biology of the Cell* 20 (13):3142-3154.

COS-7 cells (monkey, kidney)

Zhang et al. "Homeodomain-interacting Protein Kinase-2 Mediates CtBP Phosphorylation and Degradation in UV-triggered Apoptosis." (2005) *Proc. Natl. Acad. Sci. USA* 102(8):2802-2807.

CV-1 cells (monkey, kidney)

Buster et al. "Katanin Inhibition Prevents the Redistribution of γ -Tubulin at Mitosis." (2002) *Journal of Cell Science* 115(15):1083-1092.

DRG axons (rat)

Heerssen *et al.* "Dynein Motors Transport Activated Trks to Promote Survival of Target-dependent Neurons." (2004) *Nature Neuroscience* 7(6):596-604.

Embryo Retina (chicken)

Gehler *et al.* "Brain-Derived Neutrophic Factor Regulation of Retinal Growth Cone Filopodial Dynamics Is Mediated through Actin Depolymerizing Factor/Cofilin." (2004) *Journal of Neuroscience* 24(47):10741-10749.

Eosinophils (human)

Cen et al. "Identification of UNC119 as a Novel Activator of SRC-type Tyrosine Kinases." (2003) Journal of Biological Chemistry 278(10):8837-8845.

Gingival fibroblasts (human, primary)

Black *et al.* "Transforming Growth Factor- β 1 (TGF β 1) Stimulates Connective Tissue Growth Factor (CCN2/CTGF) Expression in Human Gingival Fibroblasts through a RhoA-independent, Rac1/Cdc42-dependent Mechanism: Statins With Forskolin Block TGF β 1-Induced CCN2/CTGF Expression." (2008) *Journal of Biological Chemistry* 283(16):10835 -40847.



H295r cells (human, adrenocortical)

Romero *et al.* "Angiotensin II-Mediated Protein Kinase D Activation Stimulates Aldosterone and Cortisol Secretion in H295R Human Adrenocortical Cells." (2006) *Endocrinology* 147(12):6046-6055.

HA-13 cells (hybridoma)

Cheriyath *et al.* "c-Src-dependent Transcriptional Activation of TFII-I." (2002) *Journal of Biological Chemistry* 277 (5):22798-22805.

HaCaT cells (human, adult keratinocytes) and NHK cells (human, normal keratinocytes)

Sakaguchi *et al.* "S100C/A11 is a Key Mediator of Ca2+-induced Growth Inhibition of Human Epidermal Keratinocytes." (2003) *Journal of Cell Biology* 163(4):825-835.

HEK293 cells (human, embryonic kidney)

Forneris *et al.* "A Highly Specific Mechanism of Histone H3-K4 Recognition by Histone Demethylase LSD1." (2006) *Journal of Biological Chemistry* 281(46):35289-25295.

Lerner-Marmarosh *et al.* "Regulation of TNF- α -activated PKC- ζ Signaling by the Human Biliverdin Reductase: Identification of Activating and Inhibitory Domains of the Reductase." (2007) *The FASEB Journal* 21(14):3949-3962.

HEK293 cells (human, embryonic kidney) and Hippocampal neurons

Li et al. "G Protein β 2 Subunit Derived Peptides for Inhibition and Induction of G Protein Pathways." (2005) *Journal of Biological Chemistry* 280(25):23945-23959.

HeLa cells (human, cervical cancer)

Manthey et al. "Nbs1 Mediates ATR-dependent RPA Hyperphosphorylation Following Replication-Fork Stall and Collapse." (2007) Journal of Cell Science 120(Pt. 23):4221-4229.

Sato *et al.* "Probing the Chromosome 9p21 Region Susceptible to DNA Double-strand Breaks in Human Cells In Vivo by Restriction Enzyme Transfer." (2005) *Oncogene* 24(40):6108-6118.

HeLa cells (human, cervical cancer) and HEK293 cells (human, embryonic kidney)

Kim et al. "Importin- β Mediates Cdc7 Nuclear Import by Binding to the Kinase Insert II Domain, which can be Antagonized by Importin- α ." (2006) Journal of Biological Chemistry 281(17):12041-12049.

Hep G2 cells (human, hepatocellular carcinoma)

Alshatwi *et al.* "Nuclear Accumulations of p53 and Mdm2 Are Accompanied by Reductions in c-Abl and p300 in Zinc-depleted Human Hepatoblastoma Cells." (2006) *Exp. Biol. Med.* 231(5):611-618.

Hepatocytes (mouse, primary)

Bardag-Gorce *et al.* "The Mechanism of Cytokeratin Aggresome Formation: the Role of Mutant Ubiquitin (UBB+1)." (2003) *Exp. & Mol. Pathology* 74(2):160-167.

Hippocampal neuronal cultures (rat)

Blair *et al.* "Epileptogenesis Causes Acute and Chronic Increases in GABA-A Receptor Endocytosis That Contributes to the Induction and Maintenance of Seizures in the Hippocampal Culture Model of Acquired Epilepsy." (2004) *Journal of Pharmacology Exp. Ther.* 310(3):871-880.

Hippocampal neurons (primary)

Viviani et al. "IL-1 β Released by gp120 Drives Neural Death Through Tyrosine Phosphorylation and Trafficking of NMDA Receptors." (2006) *Journal of Biological Chemistry* 281(40):30212-30222.

Hippocampal neurons (rat, primary)

MacAskill *et al.* "Mirol Is a Calcium Sensor for Glutamate Receptor-Dependent Localization of Mitochondria at Synapses." (2009) *Neuron* 61(4):541-555.



HT-29 cells (human, colon adenocarcinoma)

Yang et al. "Phosphorylation of P68 RNA Helicase plays a Role in PDGF-induced Cell Proliferation by Up-regulating Cyclin D1 and c-Myc Expression." (2007) *Journal of Biological Chemistry* 282(23):16811-16819.

HT1080 cells (human, fibrosarcoma)

Minogue et al. "Phosphatidylinositol 4-kinase is Required for Endosomal Trafficking and Degradation of the EGF Receptor." (2006) Journal of Cell Science 119(Pt. 3):571-581.

INS-1 cells (rat, insulinoma)

Fu et al. "Genistein Induces Pancreatic β -Cell Proliferation through Activation of Multiple Signaling Pathways and Prevents Insulin-Deficient Diabetes in Mice." (2010) Endocrinology 151(7):3026-3037.

Isolated Resistance Arteries

Keller *et al.* "Sphongosine Kinase Functionally Links Elevated Transmural Pressure and Increased Reactive Oxygen Species Formation in Resistance Arteries." (2006) *The FASEB Journal* 20(6):702-704.

Jurkat cells (human, T cell lymphoblast-like)

Gorska et al. "Unc119, a Novel Activator of Lck/Fyn, Is Essential for T Cell Activation." (2004) *Journal of Experimental Medicine* 199(3):369-379.

Kidney cultures (mouse, embryonic)

Sorenson *et al.* "Interaction of bcl-2 with Paxillin through Its BH4 Domain Is Important during Ureteric Bud Branching." (2004) *Journal of Biological Chemistry* 279(12):11368-11374.

KO macrophages

Garnon *et al.* "Fragile X-related Protein FXRIP Regulates Proinflammatory Cytokine Tumor Necorsis Factor Expression at the Post-transcriptional Level." (2005) *Journal of Biological Chemistry* 280(7):5750-5763.

L929 cells (mouse, fibrosarcoma)

Park et al. "The Cell-Penetrating Peptide, Pep-1, has Activity Against Intracellular Chlamydial Growth but Not Extracellular Forms of Chlamydia trachomatis." (2009) Journal of Antimicrobial Chemotherapy 63(1):115-123.

LEW cells (rat (Lewis), fibroblast skin primary)

Planz et al. "Borna Disease Virus Nucleoprotein Interacts with the Cdc2-Cyclin B1 Complex." (2003) *Journal of Virology* 77(20):11186-11192.

LLC-PK1 cells (pig, renal epithelial)

Liu et al. "Endoplasmic Reticulum Stress-Associated Caspase 12 Mediates Cisplatin-Induced LLC-PK1 Cell Apoptosis." (2005) J. Am. Soc. Nephrol. 16(7):1985-1992.

LLC-PK1 cells (porcine, renal epithelial)

Ikari *et al.* "Up-regulation of Sodium-dependent Glucose Transporter by Interaction with Heat Shock Protein 70." (2002) *Journal of Biological Chemistry* 277(36):3338-33343.

LNCaP cells (human, prostatic carcinoma), NbE cells (rat, prostatic epithelium) and COS cells (monkey, kidney) cells Zhou et al. "Characterization of a Novel Negative Regular (DOC-2/DAB2) of c-Src in Normal Prostatic Epithelium and Cancer." (2003) Journal of Biological Chemistry 278(9):6936-6941.

Lung in vivo (mouse, intratracheally) and alveolar epithelial cells (mouse, primary-in vitro)

Aoshiba *et al.* "Alveolar Wall Apoptosis Causes Lung Destruction and Emphysematous Changes." (2003) *Am. J. Respir. Cell Mol. Biol.* 28(5):555-562.



MCF-7 cells (human, breast carcinoma)

Sebbagh et al. "Direct Cleavage of ROCK II by Granzyme B Induces Target Cell Membrane Blebbing in a Caspase-independent Manner." (2005) Journal of Experimental Medicine 201(3):465-471.

Lee et al. "Astrocyte Elevated Gene-1 (AEG-1) Is a Target Gene of Oncogenic ha-ras Requiring Phosphatidylinositol 3-Kinase and c-Myc." (2006) *Proc. Natl. Acad. Sci. USA* 103(46):17390-17395.

MCF-7/ADR cells (human, breast carcinoma)

Lee *et al.* "The Nucleoside Analog Sangivamycin Induces Apoptotic Cell Death in Breast Carcinoma MCF7/Adriamycin-resistant Cells via Protein Kinase C δ and JNK Activation." (2007) *Journal of Biological Chemistry* 282(20):15271-15283.

MDA-MB-231 cells (human, breast adenocarcinoma)

Pratt *et al.* "Activation of the EphA2 Tyrosine Kinase Stimulates the MAP/ERK Kinase Signaling Cascade." (2002) *Oncogene* 21(50):7690-7699.

MEF cells (mouse, embryonic fibroblast)

Bonzon et al. "Caspase-2-induced Apoptosis Requires Bid Cleavage: A Physiological Role for Bid in Heat Shock-induced Death." (2006) Molecular Biology of the Cell 17(5):2150-2157.

Chipuk *et al.* "Direct Activation of Bax by p53 Mediates Mitochondrial Membrane Permeabilization and Apoptosis." (2004) *Science* 303(5660):1010-1014.

MGC80-3, HeLa cells (human, cervical cancer) and NIH-3T3 cells (mouse, fibroblast)

Lin *et al.* "RXRα Acts As a Carrier for TR3 Nuclear Export in a 9-cis Retinoic Acid-dependent Manner in Gastric Cancer Cells." (2004) *Journal of Cell Science* 117(Pt. 23):5609-5621.

Monocytes (human) and H1299 (human, non-small cell lung cancer)

Tang et al. "p53 Short Peptide (p53pep164) Regulates Lipopolysaccharide-Induced Tumor Necrosis Factor- α Factor/Cytokine Expression." (2007) Cancer Research 67(3):1308-1316.

Motor neurons (rat, embryo)

Ye et al. "Prevention of Peroxynitrite-induced Apoptosis of Motor Neurons and PC12 Cells by Tyrosine-containing Peptides." (2007) *Journal of Biological Chemistry* 282(9):6324-6337.

Mouse Embryonic Cells (mouse, primary)

Bayir *et al.* "Peroxidase Mechanism of Lipid-dependent Cross-linking of Synuclein with Cytochrome c – Protection Against Apoptosis Versus Delayed Oxidative Stress in Parkinson Disease." (2009) *Journal of Biological Chemistry* 284 (23):15951-15969.

Muscle tissue (mouse)

Jevsek et al. "CD24 is Expressed by Myofiber Synaptic Nuclei and Regulates Synaptic Transmission." (2006) *Proc. Natl. Acad. Sci. USA* 103(16):6374-6379.

NbE cells (rat, nontumorigenic prostatic epithelial)

Zhou et al. "The Inhibitory Role of DOC-2/DAB2 in Growth Factor Receptor-mediated Signal Cascade." (2001) *Journal of Biological Chemistry* 276(30):27793-27798.

NCI-H295R cells (human, adrenal corticocarcinoma)

Pandey et al. "Protein Phosphatase 2A and Phosphoprotein SET Regulate Androgen Production by P450c17." (2003) *Journal of Biological Chemistry* 278(5):2837-2844.

Sugawara *et al.* "CREM Confers cAMP Responsiveness in Human Steroidogenic Acute Regulatory Protein Expression in NCI-H295R Cells Rather Than SF-1/Ad4BP." (2006) *Journal of Endocrinology* 191(1):327-337.

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Neocortical neurons (mouse, embryo)

Ma et al. "Toll-like Receptor 8 Functions As a Negative Regulator of Neurite Outgrowth and Inducer of Neuronal Apoptosis." (2006) Journal of Cell Biology 175(2):209-215.

Neuronal cells (DRG axons)

Gallo et al. "Actin Turnover Is Required to Prevent Axon Retraction Driven by Endogenous Actomyosin Contractility." (2002) Journal of Cell Biology 158(7):1219-1228.

Neuronal cells (growth cones)

Jurney et al. "Rac1-Mediated Endocytosis during Ephrin-A2- and Semaphorin 3A-Induced Growth Cone Collapse." (2002) Journal of Neuroscience 22(14):6019-6028.

Neuronal cells (mouse, DRG and chick, E9 ganglions)

Coulpier *et al.* "Coordinated Activation of Autophosphorylation Sites in the RET Receptor Tyrosine Kinase." (2002) *Journal of Biological Chemistry* 277(3):1991-1999.

NIH-3T3 cells, Ron (mouse, fibroblast)

Yokoyama *et al.* "The C Terminus of RON Tyrosine Kinase Plays an Autoinhibitory Role." (2005) *Journal of Biological Chemistry* 280(10):8893-8900.

NRK cells (rat, normal kidney)

Tisdale *et al.* "Glyceraldehyde-3-phosphate Dehydrogenase Is Phosphorylated by Protein Kinase C and Plays a Role in Microtubule Dynamics in the Early Secretory Pathway." (2002) *Journal of Biological Chemistry* 277(5):3334-3341.

Oligodendrocytes (mouse)

Kippert *et al.* "Rho Regulates Membrane Transport in the Endocytic Pathway to Control Plasma Membrane Specialization in Oligodendroglial Cells." (2007) *Journal of Neuroscience* 27(13):3560-3570.

Osteoclasts (mouse)

Nandan Sahu et al. "Association of Leupaxin with Src in Osteoclasts." (2007) Am. J. Physiol. Cell Physiol. 292(1):C581-C590.

PAEC cells (porcine, aortic endothelial cells)

Cioffi et al. "Activation of the Endothelial Store-Operated ISOC Ca2+ Channel Requires Interaction of Protein 4.1 with TRPC4." (2005) *Circulation Research* 97(11):1164-1172.

PBMC (human, peripheral blood mononuclear cells from MCL patients)

Roue *et al.* "Bendamustine Is Effective in p53-Deficient B-Cell Neoplasms and Requires Oxidative Stress and Caspase-Independent Signaling." (2008) *Clinical Cancer Research* 14(21):6907-6915.

PC-12 cells (rat, pheochromocytoma)

Limpert *et al.* "Nerve Growth Factor Stimulates the Concentration of TrkA within Lipid Rafts and Extracellular Signal-Regulated Kinase Activation through c-Cbl-Associated Protein." (2007) *Molecular and Cellular Biology* 27(16):5686 -5698.

Photoreceptor cells (mouse)

Koulen *et al.* "Interaction Between mGluR8 and Calcium Channels in Photoreceptors is Sensitive to Pertussis Toxin and Occurs via G Protein βγ Subunit Signaling." (2005) *Investigative Ophth. & Visual Sci.* 46(1):287-291.

Plant cells

Wu *et al.* "Direct Delivery of Bacterial Avirulence Proteins Into Resistant Arabidopsis Protoplasts Leads to Hypersensitive Cell Death." (2002) *The Plant Journal* 33(1):131-137.

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Pulmonary artery cells (feline, smooth muscle, primary)

Madden *et al.* "Telokin Expression and the Effect of Hypoxia on Its Phosphorylation Status in Smooth Muscle Cells from Small and Large Pulmonary Arteries." (2008) *Am. J. Physiol. Lung Cell Mol. Physiol.* 294(6):L1166-L1173.

Rat lung tissue (in vivo)

Maron et al. "PKA Delivery to the Distal Lung Airspace Increases Alveolar Liquid Clearance after Isoproterenol-induced Alveolar Epithelial PKA Desensitization." (2005) Am. J. Physiol. Lung Cell Mol. Physiol. 289(2):349-354.

Review article

Sebbage et al. "Cell-penetrating Peptides and Their Therapeutic Applications." (2009) Bioscience Horizions 2(1):64-72.

Review article: describes Pep-1 (Chariot): HS-68 (human, foreskin fibroblast), NIH 3T3 (mouse, embryonic fibroblast), 293 (human, kidney) and COS-7 cells (African Green Monkey, kidney)

Morris et al. "A Peptide Carrier for the Delivery of Biologically Active Proteins Into Mammalian Cells." (2001) *Nature Biotechnology* 19(12):1173-1176.

SCC-61 cells (human, squamous carcinoma), SQ-20B cells (human, head and neck cancer) and MEF (mouse, embryonic fibroblasts)

Taneja et al. "Histone H2AX Phosphorylation as a Predictor of Radiosensitivity and Target for Radiotherapy." (2004) *Journal of Biological Chemistry* 279(3):2273-2280.

SH-SY5Y cells (human, neuroblastoma)

Mollereau *et al.* "Neuropeptide FF (NPFF) Analogs Functionally Antagonize Opioid Activities in NPFF2 Receptor-Transfected SH-SY5Y Neuroblastoma Cells." (2005) *Molecular Pharmacology* 67(3):965-975.

SIGC (rat, spontaneously immortalized granulosa cells)

Peluso et al. "Basic Fibroblast Growth Factor Maintains Calcium Homeostasis and Granulosa Cell Viability by Stimulating Calcium Efflux via a PKC δ -Dependent Pathway." (2001) Endocrinology 142(10):4203-4211.

SK-N-SH cells (human, neuroblastoma) and U2 OS cells (human, osteosarcoma)

Eskiw et al. "Chromatin Contributes to Structural Integrity of Promyelocytic Leukemia Bodies through a SUMO-1-independent Mechanism." (2004) *Journal of Biological Chemistry* 279(10):9577-9585.

Spleen cells (mouse)

Arita et al. "Stereochemical Assignment, Antiinflammatory Properties, and Receptor for the Omega-3 Lipid Mediator Resolvin El." (2005) Journal of Experimental Medicine 201(5):713-722.

THP-1 cells (human, leukemia)

Fragaki *et al.* "A Novel Leishmania Infantum Nuclear Phosphoprotein Lepp12 Which Stimulates IL1-beta Synthesis in THP-1 Transfectants." (2003) *BMC Microbiology* 3(7):Online.

Tang et al. "Identification and Functional Characterization of a Novel Binding Site on TNF- α Promoter." (2003) *Proc. Natl. Acad. Sci. USA* 100(6):4096-4101.

Vero cells (African Green Monkey, kidney epithelial)

Morinaga *et al.* "Two Distinct Cytotoxic Activities of Subtilase Cytotoxin Produced by Shiga Toxigenic Escherichia Coli." (2007) *Infection and Immunity* 75(1):488-496.

VSMC (rat, vascular smooth muscle cells)

Taniyama *et al.* "Role of p38 MAPK and MAPKAPK-2 in Angiotensin II-induced AKT Activation in Vascular Smooth Muscle Cells." (2004) *Am. J. Physiol. Cell Physiol.* 287(2):C494-C499.

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WEHI7.2 (mouse lymphocytic leukemia cells)

Harr *et al.* "Glucocorticoid-mediated Inhibition of Lck Modulates the Pattern of T Cell Receptor-induced Calcium Signals by Down-regulating Inositol 1,4,5-Trisphosphate Receptors." (2009) *Journal of Biological Chemistry* 284 (46):31860-31871.

Zygotes pronucleate-stage (bovine and rhesus monkey)

Payne *et al.* "Preferentially Localized Dynein and Perinuclear Dynactin Associate With Nuclear Pore Complex Proteins to Mediate Genomic Union During Mammalian Fertilization." (2003) *Journal of Cell Science* 116(Pt. 1):4727-4738.