

## Publications Stemming From

### The Progeria Research Foundation Cell and Tissue Bank

The Progeria Research Foundation Cell and Tissue Bank has contributed to the following medical publications, categorized by cell line for researcher convenience:

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#### **HGADFN001**

[Age-dependent loss of MMP-3 in Hutchinson-Gilford progeria syndrome.](#)

Harten IA, Zahr RS, Lemire JM, Machan JT, Moses MA, Doiron RJ, Curatolo AS, Rothman FG, Wight TN, Toole BP, Gordon LB. *J Gerontol A Biol Sci Med Sci*. 2011 Nov;66(11):1201-7.

[The mutant form of lamin A that causes Hutchinson-Gilford progeria is a biomarker of cellular aging in human skin.](#)

McClintock D, Ratner D, Lokuge M, Owens DM, Gordon LB, Collins FS, Djabali K. *PLoS One*. 2007 Dec 5;2(12):e1269.

[Hutchinson-Gilford progeria mutant lamin A primarily targets human vascular cells as detected by an anti-Lamin A G608G antibody.](#)

McClintock D, Gordon LB, Djabali K. *Proc Natl Acad Sci U S A*. 2006 Feb 14;103(7):2154-9.

[Aggrecan expression is substantially and abnormally upregulated in Hutchinson-Gilford Progeria Syndrome dermal fibroblasts.](#)

Lemire JM, Patis C, Gordon LB, Sandy JD, Toole BP, Weiss AS. *Mech Ageing Dev*. 2006 Aug;127(8):660-9.

[Rescue of heterochromatin organization in Hutchinson-Gilford progeria by drug treatment.](#)

Columbaro M, Capanni C, Mattioli E, Novelli G, Parnaik VK, Squarzoni S, Maraldi NM, Lattanzi G. *Cell Mol Life Sci*. 2005 Nov;62(22):2669-78.

[Recurrent de novo point mutations in lamin A cause Hutchinson-Gilford progeria syndrome.](#)

Eriksson M, Brown WT, Gordon LB, Glynn MW, Singer J, Scott L, Erdos MR, Robbins CM, Moses TY, Berglund P, Dutra A, Pak E, Durkin S, Csoka AB, Boehnke M, Glover TW, Collins FS. *Nature*. 2003 May 15;423(6937):293-8.

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#### **HGADFN003**

[Permanent farnesylation of lamin A mutants linked to progeria impairs its phosphorylation at serine 22 during interphase.](#) Moiseeva O, Lopes-Paciencia S, Huot G, Lessard F, Ferbeyre G.

*Aging* . 2016 Feb;8(2):366-81.

[Lamin A Is an Endogenous SIRT6 Activator and Promotes SIRT6-Mediated DNA Repair.](#)

Ghosh S, Liu B, Wang Y, Hao Q, Zhou Z. *Cell Rep.* 2015 Nov 4. [Epub ahead of print]

[Proliferation of progeria cells is enhanced by lamina-associated polypeptide 2 \$\alpha\$  \(LAP2 \$\alpha\$ \) through expression of extracellular matrix proteins.](#)

Vidak S, Kubben N, Dechat T, Foisner R. *Genes & Development.* 2015 Oct 1;29(19):2022-36.

[Sulforaphane enhances progerin clearance in Hutchinson-Gilford progeria fibroblasts.](#)

Gabriel D, Roedl D, Gordon LB, Djabali K. *Aging Cell.* 2014 Dec 16: 1-14.

[Depleting the methyltransferase Suv39h1 improves DNA repair and extends lifespan in a progeria mouse model.](#)

Liu B, Wang Z, Zhang L, Ghosh S, Zheng H, Zhou Z. *Nat Commun.* 2013;4:1868.

[Naïve adult stem cells from patients with Hutchinson-Gilford progeria syndrome express low levels of progerin in vivo.](#)

Wenzel V, Roedl D, Gabriel D, Gordon LB, Herlyn M, Schneider R, Ring J, Djabali K. *Biol Open.* 2012 Jun 15;1(6):516-26. Epub 2012 Apr 16.

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[Progerin and telomere dysfunction collaborate to trigger cellular senescence in normal human fibroblasts.](#)

Cao K, Blair CD, Faddah DA, Kieckhafer JE, Olive M, Erdos MR, Nabel EG, Collins FS. *J Clin Invest.* 2011 Jul 1;121(7):2833-44

[Defective lamin A-Rb signaling in Hutchinson-Gilford Progeria Syndrome and reversal by farnesyltransferase inhibition.](#)

Marji J, O'Donoghue SI, McClintock D, Satagopam VP, Schneider R, Ratner D, Worman HJ, Gordon LB, Djabali K. *PLoS One.* 2010 Jun 15;5(6):e11132.

[Effect of progerin on the accumulation of oxidized proteins in fibroblasts from Hutchinson Gilford progeria patients.](#)

Viteri G, Chung YW, Stadtman ER. *Mech Ageing Dev.* 2010 Jan;131(1):2-8.

[Ageing-related chromatin defects through loss of the NURD complex.](#)

Pegoraro G, Kubben N, Wickert U, Göhler H, Hoffmann K, Misteli T. *Nat Cell Biol.* 2009 Oct;11(10):1261-7.

[Lamin A-dependent misregulation of adult stem cells associated with accelerated ageing.](#)

Scaffidi P, Misteli T. *Nat Cell Biol.* 2008 Apr;10(4):452-9.

[Perturbation of wild-type lamin A metabolism results in a progeroid phenotype.](#)

Candelario J, Sudhakar S, Navarro S, Reddy S, Comai L. *Aging Cell*. 2008 Jun;7(3):355-67

[Alterations in mitosis and cell cycle progression caused by a mutant lamin A known to accelerate human aging.](#)

Dechat T, Shimi T, Adam SA, Rusinol AE, Andres DA, Spielmann HP, Sinensky MS, Goldman RD. *Proc Natl Acad Sci USA*. 2007 Mar 20;104(12):4955-60.

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Cao K, Capell BC, Erdos MR, Djabali K, Collins FS. *Proc Natl Acad Sci USA*. 2007 Mar 20;104(12):4949-54.

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[Genomic instability in laminopathy-based premature aging.](#)

Liu B, Wang J, Chan KM, Tjia WM, Deng W, Guan X, Huang JD, Li KM, Chau PY, Chen DJ, Pei D, Pendas AM, Cadiñanos J, López-Otín C, Tse HF, Hutchison C, Chen J, Cao Y, Cheah KS, Tryggvason K, Zhou Z. *Nat Med*. 2005 Jul;11(7):780-5.

[Incomplete processing of mutant lamin A in Hutchinson-Gilford progeria leads to nuclear abnormalities, which are reversed by farnesyltransferase inhibition.](#)

Glynn MW, Glover TW. *Hum Mol Genet*. 2005 Oct 15;14(20):2959-69.

[Accumulation of mutant lamin A causes progressive changes in nuclear architecture in Hutchinson-Gilford progeria syndrome.](#)

Goldman RD, Shumaker DK, Erdos MR, Eriksson M, Goldman AE, Gordon LB, Gruenbaum Y, Khuon S, Mendez M, Varga R, Collins FS. *Proc Natl Acad Sci U S A*. 2004 Jun 15;101(24):8963-8.

[Recurrent de novo point mutations in lamin A cause Hutchinson-Gilford progeria syndrome.](#)  
Eriksson M, Brown WT, Gordon LB, Glynn MW, Singer J, Scott L, Erdos MR, Robbins CM, Moses TY, Berglund P, Dutra A, Pak E, Durkin S, Csoka AB, Boehnke M, Glover TW, Collins FS. *Nature*. 2003 May 15;423(6937):293-8.

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### **HGADFN004**

[Incomplete processing of mutant lamin A in Hutchinson-Gilford progeria leads to nuclear abnormalities, which are reversed by farnesyltransferase inhibition.](#)  
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Eriksson M, Brown WT, Gordon LB, Glynn MW, Singer J, Scott L, Erdos MR, Robbins CM, Moses TY, Berglund P, Dutra A, Pak E, Durkin S, Csoka AB, Boehnke M, Glover TW, Collins FS. *Nature*. 2003 May 15;423(6937):293-8.

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### **HGADFN008**

[Recurrent de novo point mutations in lamin A cause Hutchinson-Gilford progeria syndrome.](#)  
Eriksson M, Brown WT, Gordon LB, Glynn MW, Singer J, Scott L, Erdos MR, Robbins CM, Moses TY, Berglund P, Dutra A, Pak E, Durkin S, Csoka AB, Boehnke M, Glover TW, Collins FS. *Nature*. 2003 May 15;423(6937):293-8.

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### **HGADFN014**

[Recurrent de novo point mutations in lamin A cause Hutchinson-Gilford progeria syndrome.](#)  
Eriksson M, Brown WT, Gordon LB, Glynn MW, Singer J, Scott L, Erdos MR, Robbins CM, Moses TY, Berglund P, Dutra A, Pak E, Durkin S, Csoka AB, Boehnke M, Glover TW, Collins FS. *Nature*. 2003 May 15;423(6937):293-8.

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### **HGADFN086**

[Increased progerin expression associated with unusual LMNA mutations causes severe progeroid syndromes.](#)  
Moulson CL, Fong LG, Gardner JM, Farber EA, Go G, Passariello A, Grange DK, Young SG, Miner JH. *Hum Mutat*. 2007 Sep;28(9):882-9.

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## **HGMDFN090**

### [Methylene blue alleviates nuclear and mitochondrial abnormalities in progeria.](#)

Xiong ZM, Choi JY, Wang K, Zhang H, Tariq Z, Wu D, Ko E, LaDana C, Sesaki H, Cao K. *Aging Cell*. 2015 Dec 14. [Epub ahead of print]

### [Proliferation of progeria cells is enhanced by lamina-associated polypeptide 2 \$\alpha\$ \(LAP2 \$\alpha\$ \) through expression of extracellular matrix proteins.](#)

Vidak S, Kubben N, Dechat T, Foisner R. *Genes & Development*. 2015 Oct 1;29(19):2022-36.

### [Higher-order unfolding of satellite heterochromatin is a consistent and early event in cell senescence.](#)

Swanson EC, Manning B, Zhang H, Lawrence JB. *J Cell Biol*. 2013 Dec 23;203(6):929-42.

### [Correlated alterations in genome organization, histone methylation, and DNA-lamin A/C interactions in Hutchinson-Gilford progeria syndrome.](#)

McCord RP, Nazario-Toole A, Zhang H, Chines PS, Zhan Y, Erdos MR, Collins FS, Dekker J, Cao K. *Genome Res*. 2013 Feb;23(2):260-9. Epub 2012 Nov 14.

### [Comparison of constitutional and replication stress-induced genome structural variation by SNP array and mate-pair sequencing.](#)

Arlt MF, Ozdemir AC, Birkeland SR, Lyons RH Jr, Glover TW, Wilson TE. *Genetics*. 2011 Mar;187(3):675-83.

### [Hydroxyurea induces de novo copy number variants in human cells.](#)

Arlt MF, Ozdemir AC, Birkeland SR, Wilson TE, Glover TW. *Proc Natl Acad Sci USA*. 2011 Oct 18;108(42):17360-5

### [Progerin and telomere dysfunction collaborate to trigger cellular senescence in normal human fibroblasts.](#)

Cao K, Blair CD, Faddah DA, Kieckhafer JE, Olive M, Erdos MR, Nabel EG, Collins FS. *J Clin Invest*. 2011 Jul 1;121(7):2833-44

### [CTP:phosphocholine cytidyltransferase \$\alpha\$ \(CCT \$\alpha\$ \) and lamins alter nuclear membrane structure without affecting phosphatidylcholine synthesis.](#)

Gehrig K, Ridgway ND. *Biochim Biophys Acta*. 2011 Jun;1811(6):377-85.

### [Effect of progerin on the accumulation of oxidized proteins in fibroblasts from Hutchinson Gilford progeria patients.](#)

Viteri G, Chung YW, Stadtman ER. *Mech Ageing Dev*. 2010 Jan;131(1):2-8.

### [Replication stress induces genome-wide copy number changes in human cells that resemble polymorphic and pathogenic variants.](#)

Arlt MF, Mulle JG, Schaibley VM, Ragland RL, Durkin SG, Warren ST, Glover TW. *Am J Hum Genet.* 2009 Mar;84(3):339-50.

[A lamin A protein isoform overexpressed in Hutchinson-Gilford progeria syndrome interferes with mitosis in progeria and normal cells.](#)

Cao K, Capell BC, Erdos MR, Djabali K, Collins FS. *Proc Natl Acad Sci USA.* 2007 Mar 20;104(12):4949-54.

[Incomplete processing of mutant lamin A in Hutchinson-Gilford progeria leads to nuclear abnormalities, which are reversed by farnesyltransferase inhibition.](#)

Glynn MW, Glover TW. *Hum Mol Genet.* 2005 Oct 15;14(20):2959-69.

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## **HGADFN122**

[Lamin A Is an Endogenous SIRT6 Activator and Promotes SIRT6-Mediated DNA Repair.](#)

Ghosh S, Liu B, Wang Y, Hao Q, Zhou Z. *Cell Rep.* 2015 Nov 4. [Epub ahead of print]

[Insights into the role of immunosenescence during varicella zoster virus infection \(shingles\) in the aging cell model.](#)

Kim JA, Park SK, Kumar M, Lee CH, Shin OS. *Oncotarget.* 2015 Oct 14. [Epub ahead of print]

[Depleting the methyltransferase Suv39h1 improves DNA repair and extends lifespan in a progeria mouse model.](#)

Liu B, Wang Z, Zhang L, Ghosh S, Zheng H, Zhou Z. *Nat Commun.* 2013;4:1868.

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## **HGADFN127**

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[Sulforaphane enhances progerin clearance in Hutchinson-Gilford progeria fibroblasts.](#)

Gabriel D, Roedel D, Gordon LB, Djabali K. *Aging Cell.* 2014 Dec 16: 1-14.

[A proteomic study of Hutchinson-Gilford progeria syndrome: Application of 2D-chromatography in a premature aging disease.](#)

Wang L, Yang W, Ju W, Wang P, Zhao X, Jenkins EC, Brown WT, Zhong N. *Biochem Biophys Res Commun.* 2012 Jan 27;417(4):1119-26. Epub 2011 Dec 24.

[Age-dependent loss of MMP-3 in Hutchinson-Gilford progeria syndrome.](#)

Harten IA, Zahr RS, Lemire JM, Machan JT, Moses MA, Doiron RJ, Curatolo AS, Rothman FG, Wight TN, Toole BP, Gordon LB. *J Gerontol A Biol Sci Med Sci.* 2011 Nov;66(11):1201-7.

[CTP:phosphocholine cytidyltransferase  \$\alpha\$  \(CCT \$\alpha\$ \) and lamins alter nuclear membrane structure without affecting phosphatidylcholine synthesis.](#)

Gehrig K, Ridgway ND. *Biochim Biophys Acta*. 2011 Jun;1811(6):377-85.

[Defective lamin A-Rb signaling in Hutchinson-Gilford Progeria Syndrome and reversal by farnesyltransferase inhibition.](#)

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[Increased mechanosensitivity and nuclear stiffness in Hutchinson-Gilford progeria cells: effects of farnesyltransferase inhibitors.](#)

Verstraeten VL, Ji JY, Cummings KS, Lee RT, Lammerding J. *Aging Cell*. 2008 Jun;7(3):383-93.

[Alterations in mitosis and cell cycle progression caused by a mutant lamin A known to accelerate human aging.](#)

Dechat T, Shimi T, Adam SA, Rusinol AE, Andres DA, Spielmann HP, Sinensky MS, Goldman RD. *Proc Natl Acad Sci USA*. 2007 Mar 20;104(12):4955-60.

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[Novel progerin-interactive partner proteins hnRNP E1, EGF, Mel 18, and UBC9 interact with lamin A/C.](#)

Zhong N, Radu G, Ju W, Brown WT. *Biochem Biophys Res Commun*. 2005 Dec 16;338(2):855-61.

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### **HGADFN136**

[Incomplete processing of mutant lamin A in Hutchinson-Gilford progeria leads to nuclear abnormalities, which are reversed by farnesyltransferase inhibition.](#)

Glynn MW, Glover TW. *Hum Mol Genet*. 2005 Oct 15;14(20):2959-69.

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### **HGADFN143**

[Depleting the methyltransferase Suv39h1 improves DNA repair and extends lifespan in a progeria mouse model.](#)

Liu B, Wang Z, Zhang L, Ghosh S, Zheng H, Zhou Z. *Nat Commun*. 2013;4:1868.

[CTP:phosphocholine cytidyltransferase  \$\alpha\$  \(CCT \$\alpha\$ \) and lamins alter nuclear membrane structure without affecting phosphatidylcholine synthesis.](#)

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### **HGADFN155**

[Lamin A Is an Endogenous SIRT6 Activator and Promotes SIRT6-Mediated DNA Repair.](#)

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McCord RP, Nazario-Toole A, Zhang H, Chines PS, Zhan Y, Erdos MR, Collins FS, Dekker J, Cao K. *Genome Res*. 2013 Feb;23(2):260-9. Epub 2012 Nov 14.

[An inhibitory role of progerin in the gene induction network of adipocyte differentiation from iPS cells.](#)

Xiong ZM, LaDana C, Wu D, Cao K. *Aging (Albany NY)*. 2013 Apr;5(4):288-303.

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[Automated image analysis of nuclear shape: what can we learn from a prematurely aged cell?](#)

Driscoll MK, Albanese JL, Xiong ZM, Mailman M, Losert W, Cao K. *Aging (Albany NY)*. 2012 Feb;4(2):119-32.

[Rapamycin reverses cellular phenotypes and enhances mutant protein clearance in Hutchinson-Gilford progeria syndrome cells.](#)

Cao K, Graziotto JJ, Blair CD, Mazzulli JR, Erdos MR, Krainc D, Collins FS. *Sci Transl Med*. 2011 Jun 29;3(89):89ra58.

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Gabriel D, Roedl D, Gordon LB, Djabali K. *Aging Cell*. 2014 Dec 16: 1-14.

[Mechanisms controlling the smooth muscle cell death in progeria via down-regulation of poly\(ADP-ribose\) polymerase 1.](#)

Zhang H, Xiong ZM, Cao K. *Proc Natl Acad Sci U S A*. 2014 Jun 3;111(22):E2261-70. Epub 2014 May 19.

[Correlated alterations in genome organization, histone methylation, and DNA-lamin A/C interactions in Hutchinson-Gilford progeria syndrome.](#)

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Vidak S, Kubben N, Dechat T, Foisner R. *Genes & Development.* 2015 Oct 1;29(19):2022-36.

[Nuclear stiffening and chromatin softening with progerin expression leads to an attenuated nuclear response to force.](#)

Booth EA, Spagnol ST, Alcoser TA, Dahl KN. *Soft Matter.* 2015 Aug 28;11(32):6412-8. Epub 2015 Jul 14.

[Phenotype-Dependent Coexpression Gene Clusters: Application to Normal and Premature Ageing.](#)

Wang K, Das A, Xiong Z, Cao K, Hannenhalli S. *IEEE/ACM Trans Comput Biol Bioinform*. 2015 Jan-Feb;12(1):30-9.

[Mechanisms controlling the smooth muscle cell death in progeria via down-regulation of poly\(ADP-ribose\) polymerase 1.](#)

Zhang H, Xiong ZM, Cao K. *Proc Natl Acad Sci U S A*. 2014 Jun 3;111(22):E2261-70. Epub 2014 May 19.

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[Progeria: translational insights from cell biology.](#)

Gordon LB, Cao K, Collins FS. *J Cell Biol*. 2012 Oct 1;199(1):9-13. doi: 10.1083/jcb.201207072.

[Automated image analysis of nuclear shape: what can we learn from a prematurely aged cell?](#)

Driscoll MK, Albanese JL, Xiong ZM, Mailman M, Losert W, Cao K. *Aging (Albany NY)*. 2012 Feb;4(2):119-32.

[Computational image analysis of nuclear morphology associated with various nuclear-specific aging disorders.](#)

Choi S, Wang W, Ribeiro AJ, Kalinowski A, Gregg SQ, Opresko PL, Niedernhofer LJ, Rohde GK, Dahl KN. *Nucleus*. 2011 Nov 1;2(6):570-9. Epub 2011 Nov 1.

[Rapamycin reverses cellular phenotypes and enhances mutant protein clearance in Hutchinson-Gilford progeria syndrome cells.](#)

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[Effect of progerin on the accumulation of oxidized proteins in fibroblasts from Hutchinson Gilford progeria patients.](#)

Viteri G, Chung YW, Stadtman ER. *Mech Ageing Dev.* 2010 Jan;131(1):2-8.

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Eriksson M, Brown WT, Gordon LB, Glynn MW, Singer J, Scott L, Erdos MR, Robbins CM, Moses TY, Berglund P, Dutra A, Pak E, Durkin S, Csoka AB, Boehnke M, Glover TW, Collins FS. *Nature*. 2003 May 15;423(6937):293-8. Epub 2003 Apr 25.

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