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:

HGADFN001

Anti-hsa-miR-59 alleviates premature senescence associated with Hutchinson-Gilford progeria syndrome in mice

Hu Q, Zhang N, Sui T, et al. [published online ahead of print, 2022 Nov 16]. *EMBO J.* 2022;e110937. doi:10.15252/embj.2022110937

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.

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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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Transcriptional profiling of Hutchinson-Gilford Progeria patients identifies primary target pathways of progerin
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Deregulated miR-145 and miR-27b in hutchinson-gilford progeria syndrome: implications for adipogenesis
Fenzl FQ, Lederer EM, Brumma L, et al. *Aging (Albany NY)*. Published online August 27, 2025. doi:10.18632/aging.206309

Impact of miR-181a on SIRT1 Expression and Senescence in Hutchinson-Gilford Progeria Syndrome
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Enhancing Cellular Homeostasis: Targeted Botanical Compounds Boost Cellular Health Functions in Normal and Premature Aging Fibroblasts
Hartinger R, Singh K, Leverett J, Djabali K. *Biomolecules*. 2024;14(10):1310. Published 2024 Oct 16. doi:10.3390/biom14101310

Ghrelin delays premature aging in Hutchinson-Gilford progeria syndrome
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HGADFN004

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HGADFN005

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HGADFN008

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HGADFN014

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PML2-mediated Thread-Like Nuclear Bodies Mark Late Senescence in Hutchinson-Gilford Progeria Syndrome
Wang M, Wang L, Qian M, et al. [published online ahead of print, 2020 Apr 29]. *Aging Cell*
Correction acknowledging PRF for cell lines is pending

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Aberrant migration features in primary skin fibroblasts of Huntington's disease patients hold potential for unraveling disease progression using an image based machine learning tool
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Hutchinson-Gilford progeria patient-derived cardiomyocyte model of carrying LMNA gene variant c.1824 C > T
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Perturbed actin cap as a new personalized biomarker in primary fibroblasts of Huntington's disease patients
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Inhibition of the NLRP3 inflammasome improves lifespan in animal murine model of Hutchinson-Gilford Progeria
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A targeted antisense therapeutic approach for Hutchinson-Gilford progeria syndrome
Erdos MR, Cabral WA, Tavarez UL, Cao K, Gvozdenovic-Jeremic J, Narisu N, Zerfas PM, Crumley S, Boku Y, Hanson G, Mourich DV, Kole R, Eckhaus MA, Gordon LB, Collins FS. Nat Med. 2021 Mar;27(3):536-545. doi: 10.1038/s41591-021-01274-0. Epub 2021 Mar 11. PMID: 33707773.

Direct reprogramming of human smooth muscle and vascular endothelial cells reveals defects associated with aging and Hutchinson-Gilford progeria syndrome
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HGMDFN368

Selection of specific and efficient siRNAs in new cellular model for Hutchinson-Gilford progeria syndrome therapy
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A longevity-associated variant of the human BPIFB4 gene prevents diastolic dysfunction in progeria mice
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Transcriptional profiling of Hutchinson-Gilford Progeria patients identifies primary target pathways of progerin
Vidak S, Kim S, Misteli T. Preprint. *bioRxiv*. 2025;2025.09.18.677125. Published 2025 Sep 20. doi:10.1101/2025.09.18.677125

Impact of miR-181a on SIRT1 Expression and Senescence in Hutchinson-Gilford Progeria

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Lederer EM, Fenzl FQ, Krüger P, Schroll M, Hartinger R, Djabali K. *Diseases*. 2025;13(8):245. Published 2025 Aug 4. doi:10.3390/diseases13080245

Enhancing Cellular Homeostasis: Targeted Botanical Compounds Boost Cellular Health Functions in Normal and Premature Aging Fibroblasts
Hartinger R, Singh K, Leverett J, Djabali K. *Biomolecules*. 2024;14(10):1310. Published 2024 Oct 16. doi:10.3390/biom14101310

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HGADFN370

Imbalanced Nucleocytoskeletal Connections Create Common Polarity Defects in Progeria and Physiological Aging
Chang W, Wang Y, Luxton GWG, Östlund C, Worman HJ, Gundersen GG. *Proc Natl Acad Sci U S A*. 2019;116(9):3578-3583. doi:10.1073/pnas.1809683116

HGMDFN371

Imbalanced Nucleocytoskeletal Connections Create Common Polarity Defects in Progeria and

Physiological Aging
Chang W, Wang Y, Luxton GWG, Östlund C, Worman HJ, Gundersen GG. *Proc Natl Acad Sci U S A*. 2019;116(9):3578-3583. doi:10.1073/pnas.1809683116

A mutation abolishing the ZMPSTE24 cleavage site in prelamin A causes a progeroid disorder
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HGADFN496

A targeted antisense therapeutic approach for Hutchinson-Gilford progeria syndrome
Erdos MR, Cabral WA, Tavarez UL, Cao K, Gvozdenovic-Jeremic J, Narisu N, Zerfas PM, Crumley S, Boku Y, Hanson G, Mourich DV, Kole R, Eckhaus MA, Gordon LB, Collins FS. Nat Med. 2021 Mar;27(3):536-545. doi: 10.1038/s41591-021-01274-0. Epub 2021 Mar 11. PMID: 33707773.

HGMDFN717

A longevity-associated variant of the human BPIFB4 gene prevents diastolic dysfunction in progeria mice
Qiu Y, Cattaneo M, Maciag A, Puca AA, Madeddu P. *Signal Transduct Target Ther*. 2025;10(1):314. Published 2025 Sep 29. doi:10.1038/s41392-025-02416-3

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HGMDFN718

A longevity-associated variant of the human BPIFB4 gene prevents diastolic dysfunction in progeria mice
Qiu Y, Cattaneo M, Maciag A, Puca AA, Madeddu P. *Signal Transduct Target Ther*. 2025;10(1):314. Published 2025 Sep 29. doi:10.1038/s41392-025-02416-3

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PSADFN086 (formally HGADFN086)

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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.

PSADFN257

A Cell-Intrinsic Interferon-like Response Links Replication Stress to Cellular Aging Caused by Progerin.
Kreienkamp R, Graziano S, Coll-Bonfill N, Bedia-Diaz G, Cybulla E, Vindigni A, Dorsett D, Kubben N, Batista LFZ, Gonzalo S. *Cell Rep*. 2018 Feb 20;22(8):2006-2015.

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Vitamin D Receptor Signaling Improves Hutchinson-Gilford Progeria Syndrome Cellular Phenotypes
Kreienkamp R, Croke M, Neumann MA, et al. *Oncotarget* 2016;7(21):30018-30031. doi:10.18632/oncotarget.9065

PSADFN317

Impact of Combined Baricitinib and FTI Treatment on Adipogenesis in Hutchinson-Gilford Progeria Syndrome and Other Lipodystrophic Laminopathies
Hartinger R, Lederer EM, Schena E, Lattanzi G, Djabali K. Cells. 2023;12(10):1350. Published 2023 May 9. doi:10.3390/cells12101350

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PSADFN318

Impact of Combined Baricitinib and FTI Treatment on Adipogenesis in Hutchinson-Gilford Progeria Syndrome and Other Lipodystrophic Laminopathies
Hartinger R, Lederer EM, Schena E, Lattanzi G, Djabali K. Cells. 2023;12(10):1350. Published 2023 May 9. doi:10.3390/cells12101350

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Horvath S, Oshima J, Martin GM, et al. *Aging* (Albany NY). 2018;10(7):1758-1775. doi:10.18632/aging.101508

PSFDFN319

Epigenetic clock for skin and blood cells applied to Hutchinson Gilford Progeria Syndrome and ex vivo studies
Horvath S, Oshima J, Martin GM, et al. *Aging* (Albany NY). 2018;10(7):1758-1775. doi:10.18632/aging.101508

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.

PSMDFN320

Epigenetic clock for skin and blood cells applied to Hutchinson Gilford Progeria Syndrome and

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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.

PSMDFN326

Epigenetic clock for skin and blood cells applied to Hutchinson Gilford Progeria Syndrome and ex vivo studies
Horvath S, Oshima J, Martin GM, et al. *Aging* (Albany NY). 2018;10(7):1758-1775. doi:10.18632/aging.101508

PSFDFN327

A Cell-Intrinsic Interferon-like Response Links Replication Stress to Cellular Aging Caused by Progerin.
Kreienkamp R, Graziano S, Coll-Bonfill N, Bedia-Diaz G, Cybulla E, Vindigni A, Dorsett D, Kubben N, Batista LFZ, Gonzalo S. *Cell Rep*. 2018 Feb 20;22(8):2006-2015.

Epigenetic clock for skin and blood cells applied to Hutchinson Gilford Progeria Syndrome and ex vivo studies
Horvath S, Oshima J, Martin GM, et al. *Aging* (Albany NY). 2018;10(7):1758-1775. doi:10.18632/aging.101508

Vitamin D Receptor Signaling Improves Hutchinson-Gilford Progeria Syndrome Cellular Phenotypes
Kreienkamp R, Croke M, Neumann MA, et al. *Oncotarget* 2016;7(21):30018-30031. doi:10.18632/oncotarget.9065

PSMDFN346

A Cell-Intrinsic Interferon-like Response Links Replication Stress to Cellular Aging Caused by Progerin.
Kreienkamp R, Graziano S, Coll-Bonfill N, Bedia-Diaz G, Cybulla E, Vindigni A, Dorsett D, Kubben N, Batista LFZ, Gonzalo S. *Cell Rep*. 2018 Feb 20;22(8):2006-2015.

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Kreienkamp R, Croke M, Neumann MA, et al. *Oncotarget* 2016;7(21):30018-30031. doi:10.18632/oncotarget.9065

PSADFN363

The farnesyl transferase inhibitor (FTI) lonafarnib improves nuclear morphology in ZMPSTE24-deficient fibroblasts from patients with the progeroid disorder MAD-B
Odinammadu KO, Shilagardi K, Tuminelli K, Judge DP, Gordon LB, Michaelis S. *Nucleus*. 2023;14(1):2288476. doi:10.1080/19491034.2023.2288476

PSADFN373

Farnesylated prelamin A induces fibroblast polarity defects in premature aging disorders by inhibiting nesprin-2-SUN2 LINC complex function - PubMed
Lio C, Wang Y, Wilson PC, et al. *J Cell Sci*. 2026;139(12):jcs264488. doi:10.1242/jcs.264488

The farnesyl transferase inhibitor (FTI) lonafarnib improves nuclear morphology in ZMPSTE24-deficient fibroblasts from patients with the progeroid disorder MAD-B
Odinammadu KO, Shilagardi K, Tuminelli K, Judge DP, Gordon LB, Michaelis S. *Nucleus*. 2023;14(1):2288476. doi:10.1080/19491034.2023.2288476

Targeting RAS-converting enzyme 1 overcomes senescence and improves progeria-like phenotypes of ZMPSTE24 deficiency
Yao H, Chen X, Kashif M, Wang T, Ibrahim MX, Tüksammel E, Revêchon G, Eriksson M, Wiel C, Bergo MO. Aging Cell. 2020 Aug;19(8):e13200. doi: 10.1111/acel.13200. Epub 2020 Jul 24. PMID: 32910507; PMCID: PMC7431821.

PSFDFN376

Farnesylated prelamin A induces fibroblast polarity defects in premature aging disorders by inhibiting nesprin-2-SUN2 LINC complex function - PubMed
Lio C, Wang Y, Wilson PC, et al. *J Cell Sci*. 2026;139(12):jcs264488. doi:10.1242/jcs.264488

PSADFN386

MG132 Induces Progerin Clearance and Improves Disease Phenotypes in HGPS-like Patients' Cells

Harhouri K, Cau P, Casey F, et al. *Cells*. 2022;11(4):610. Published 2022 Feb 10. doi:10.3390/cells11040610

A novel somatic mutation achieves partial rescue in a child with Hutchinson-Gilford progeria syndrome

Bar DZ, Arlt MF, Brazier JF, et al. *J Med Genet*. 2017;54(3):212-216. doi:10.1136/jmedgenet-2016-104295

PSMDFN387

A novel somatic mutation achieves partial rescue in a child with Hutchinson-Gilford progeria syndrome

Bar DZ, Arlt MF, Brazier JF, et al. *J Med Genet*. 2017;54(3):212-216. doi:10.1136/jmedgenet-2016-104295

PSFDFN388

A novel somatic mutation achieves partial rescue in a child with Hutchinson-Gilford progeria syndrome

Bar DZ, Arlt MF, Brazier JF, et al. *J Med Genet*. 2017;54(3):212-216. doi:10.1136/jmedgenet-2016-104295

PSADFN392

A Cell-Intrinsic Interferon-like Response Links Replication Stress to Cellular Aging Caused by Progerin.

Kreienkamp R, Graziano S, Coll-Bonfill N, Bedia-Diaz G, Cybulla E, Vindigni A, Dorsett D, Kubben N, Batista LFZ, Gonzalo S. *Cell Rep*. 2018 Feb 20;22(8):2006-2015.

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PSMDFN393

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PSFDFN394

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Bar DZ, Arlt MF, Brazier JF, et al. *J Med Genet*. 2017;54(3):212-216. doi:10.1136/jmedgenet-2016-104295

PSADFN414

Everolimus Rescues Multiple Cellular Defects in Laminopathy-Patient Fibroblasts

DuBose AJ, Lichtenstein ST, Petrash NM, Erdos MR, Gordon LB, Collins FS [published correction appears in Proc Natl Acad Sci U S A. 2018 Apr 16;:]. *Proc Natl Acad Sci U S A*.

2018;115(16):4206-4211. doi:10.1073/pnas.1802811115

PSADFN423

A novel somatic mutation achieves partial rescue in a child with Hutchinson-Gilford progeria syndrome

Bar DZ, Arlt MF, Brazier JF, et al. *J Med Genet*. 2017;54(3):212-216. doi:10.1136/jmedgenet-2016-104295

PSADFN425

Everolimus Rescues Multiple Cellular Defects in Laminopathy-Patient Fibroblasts
DuBose AJ, Lichtenstein ST, Petrash NM, Erdos MR, Gordon LB, Collins FS [published correction appears in Proc Natl Acad Sci U S A. 2018 Apr 16;:]. *Proc Natl Acad Sci U S A*. 2018;115(16):4206-4211. doi:10.1073/pnas.1802811115

PSADFN485

The farnesyl transferase inhibitor (FTI) lonafarnib improves nuclear morphology in ZMPSTE24-deficient fibroblasts from patients with the progeroid disorder MAD-B
Odinammadu KO, Shilagardi K, Tuminelli K, Judge DP, Gordon LB, Michaelis S. *Nucleus*. 2023;14(1):2288476. doi:10.1080/19491034.2023.2288476

PSADFN542

The farnesyl transferase inhibitor (FTI) lonafarnib improves nuclear morphology in ZMPSTE24-deficient fibroblasts from patients with the progeroid disorder MAD-B
Odinammadu KO, Shilagardi K, Tuminelli K, Judge DP, Gordon LB, Michaelis S. *Nucleus*. 2023;14(1):2288476. doi:10.1080/19491034.2023.2288476

HGADFN003 iPS1B

Gaussian curvature dilutes the nuclear lamina, favoring nuclear rupture, especially at high strain rate
Pfeifer CR, Tobin MP, Cho S, et al. Nucleus. 2022;13(1):129-143. doi:10.1080/19491034.2022.2045726

iPSC-Derived Endothelial Cells Affect Vascular Function in a Tissue-Engineered Blood Vessel Model of Hutchinson-Gilford Progeria Syndrome
Atchison L, Abutaleb NO, Snyder-Mounts E, et al. *Stem Cell Reports* 2020;14(2):325-337.

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Progerin Phosphorylation in Interphase Is Lower and Less Mechanosensitive Than lamin-A,C in iPS-derived Mesenchymal Stem Cells
Cho S, Abbas A, Irianto J, et al.. *Nucleus* 2018;9(1):230-245. doi:10.1080/19491034.2018.1460185

Reprogramming Progeria Fibroblasts Re-Establishes a Normal Epigenetic Landscape
Chen Z, Chang WY, Etheridge A, et al. *Aging Cell* 2017;16(4):870-887. doi:10.1111/acel.12621

HGADFN003 iPS1C

Adenine base editing rescues pathogenic phenotypes in tissue engineered vascular model of Hutchinson-Gilford progeria syndrome
Abutaleb NO, Gao XD, Bedapudi A, et al. *APL Bioeng*. 2025;9(1):016110. Published 2025 Feb 26. doi:10.1063/5.0244026

Progeria-based vascular model identifies networks associated with cardiovascular aging and disease
Ngubo M, Chen Z, McDonald D, et al. *Aging Cell*. Published online April 4, 2024. doi:10.1111/acel.14150

iPSC-Derived Endothelial Cells Affect Vascular Function in a Tissue-Engineered Blood Vessel Model of Hutchinson-Gilford Progeria Syndrome
Atchison L, Abutaleb NO, Snyder-Mounts E, et al. *Stem Cell Reports* 2020;14(2):325-337. doi:10.1016/j.stemcr.2020.01.005

Telomerase therapy reverses vascular senescence and extends lifespan in progeria mice
Mojiri A, Walther BK, Jiang C, et al. [published online ahead of print, 2021 Aug 14]. *Eur Heart J*. 2021;ehab547. doi:10.1093/eurheartj/ehab547

Reprogramming Progeria Fibroblasts Re-Establishes a Normal Epigenetic Landscape
Chen Z, Chang WY, Etheridge A, et al. *Aging Cell*. 2017;16(4):870-887. doi:10.1111/acel.12621

HGADFN003 iPS1D

Hutchinson-Gilford progeria syndrome alters the endothelial genetic response to laminar shear stress
Kennedy CC, Carter JL, Truskey GA. *Front Physiol*. 2026;16:1599339. Published 2026 Feb 24. doi:10.3389/fphys.2025.1599339

Adenine base editing rescues pathogenic phenotypes in tissue engineered vascular model of

Hutchinson-Gilford progeria syndrome
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Reprogramming Progeria Fibroblasts Re-Establishes a Normal Epigenetic Landscape
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HGALBV009

Inhibition of the NLRP3 inflammasome improves lifespan in animal murine model of Hutchinson-Gilford Progeria
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HGMLBV010

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HGMLBV013

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HGFLBV021

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HGMLBV023

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HGFLBV031

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HGFLBV050

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HGALBV057

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HGMLBV058

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HGSLBV059

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HGMLBV066

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HGFLBV067

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HGALBV071

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HGMLBV081

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HGFLBV082

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