



**Purespring Therapeutics advances kidney-targeted gene therapy PS-003 towards the clinic in X-linked Alport Syndrome, with new preclinical and epidemiological data presented at ASN Kidney Week 2026**

- *PS-003 is designed to address the underlying genetic cause of X-linked Alport Syndrome (XLAS), and new preclinical data demonstrate the restoration of COL4A5, the key collagen protein absent or defective in XLAS*
- *PS-003 uses Purespring's podocyte-targeting GlomThera™ platform, which also underpins PS-002, the first kidney-targeted gene therapy to have been administered to patients*
- *In human podocytes, data were presented showing PS-003 produced full-length COL4A5 and drove functional collagen heterotrimer formation, while a murine surrogate vector gave consistent COL4A5 expression in the glomeruli of an XLAS mouse model*
- *These data were supported by studies in minipigs, a well-validated translational model in renal research, demonstrating a surrogate PS-003 vector delivered full-length COL4A5 gene to the kidney with no treatment-related safety concerns*
- *A new global genetic data analysis of more than 1.2 million genomes was also presented, revealing the scale and diversity of Alport Syndrome across populations in the US, UK, Europe and Japan, including an estimated 150,000 US patients with moderate or severe XLAS*
- *Findings support the rapid advancement of PS-003 towards first-in-human studies with an IND planned for 2027*

**London, UK, 27 October 2026** – Purespring Therapeutics, a precision nephrology company, pioneering podocyte-targeted, genetically-driven therapies where unmet need is greatest, today announces new preclinical data for PS-003, a novel gene therapy candidate for the treatment of X-linked Alport Syndrome (XLAS), that support its progression towards clinical development. The data were presented at the [American Society of Nephrology \(ASN\) Kidney Week 2026](#) in Denver, Colorado, alongside one of the largest genetic studies of Alport Syndrome to date. PS-003 uses Purespring's podocyte-targeting GlomThera™ platform, which also underpins PS-002, the first kidney-targeted gene therapy administered to patients, currently in clinical development for the treatment of IgA nephropathy.

**PS-003 preclinical data**

The oral presentation "[GlomThera™ platform enables durable COL4A5 expression for the treatment of X-Linked Alport Syndrome](#)" showed that PS-003 produced and secreted full-length COL4A5, the key collagen protein absent or defective in XLAS, with no detectable by-products, in human podocytes. The COL4A5 produced was functional, forming COL4A3/4/5 heterotrimers that were secreted in a dose-dependent manner. COL4A5 was also detectable in the glomerular basement membrane (GBM)-like matrix of a 3D model of the glomerulus, supporting the translational potential of this approach.

In a murine XLAS model, a single intravenous vector dose produced durable COL4A5 expression localised to the GBM and rescued COL4A3 and COL4A4 protein that was largely undetectable in untreated mice. Studies in



Göttingen minipigs, a well-validated translational model in renal research, demonstrated full-length COL4A5 gene delivery to the kidney, with mRNA detected in the majority of glomeruli. No treatment-related safety concerns were observed, even at doses significantly above the highest planned clinical dose.

PS-003 is designed to restore local production of functional type IV collagen heterotrimers by delivering the full-length COL4A5 gene to podocytes. The approach used for PS-003 may also have potential beyond XLAS to treat forms of Alport Syndrome caused by variants in COL4A3 and COL4A4.

**Haseeb Ahmad, Chief Executive Officer at Purespring Therapeutics commented:** “Alport Syndrome often progresses quickly, and there are no approved therapies that treat its underlying cause. The findings presented at ASN point to a large and genetically diverse patient population, reinforcing the rationale for targeted genetic therapies in Alport Syndrome. As the first company to administer kidney-targeted gene therapy to patients, we are uniquely placed to address this need, and we plan to submit an IND for PS-003 in 2027.”

**Alice Brown, Chief Scientific Officer at Purespring Therapeutics added:** “In XLAS, the kidney lacks functional COL4A5, so PS-003 is designed to give podocytes a working copy of the gene. The data we have presented show the potential for PS-003 to treat the central cause of XLAS by demonstrating successful delivery of functional COL4A5 in both human podocytes and animal models. Seeing the science come together like this is hugely exciting, and we look forward to quickly advancing into clinical development for this important indication where the level of unmet need is so high.”

### **Global genetic landscape analysis**

The oral presentation “[The global mutational landscape in COL4A3, COL4A4 and COL4A5, and estimating the Alport Syndrome \(AS\) population](#)” reported one of the largest genetic studies of Alport Syndrome to date, drawing on more than 1.2 million genomes from the US, UK, Europe and Japan. The results were tested against real-world clinical data from Natera’s Renasight™ database and the European Rare Kidney Disease Reference Network (ERKNet).

Using a conservative approach that counts only known disease-causing variants and those predicted to switch off the gene, the analysis estimates that 150,000 patients have XLAS. The analysis also estimates that 3.2 million people in the US (1 in 107) are heterozygotes for a disease-causing variant in one of the two Alport genes on chromosome 2.

The data also highlight G624D, a later-onset variant of XLAS that accounts for a substantial proportion of adult-onset cases in the US and Europe. Its prevalence suggests that genetic testing may be underused in older patients with suspected XLAS. The study further indicates that intronic variants contribute significantly to the burden of disease, supporting the use of genetic testing in the clinic.

In Natera’s Renasight cohort, 4.2% of tested patients carried a single COL4A3 or COL4A4 variant, compared with 1.12% of the general US population in the model, a finding consistent with carriers of a single variant being at significant risk of disease.



The study also showed the genetic diversity of the disease, identifying more than 1,800 distinct pathogenic variants across COL4A3, COL4A4 and COL4A5. Most patients carry rare or unique variants and the most common variants often differ by geography.

**Susie Gear, Chief Executive of [Alport UK](#), a UK-based patient-led charity, commented:** “For patients and families living with Alport Syndrome, there remains a significant need for new treatment options that address the underlying cause of disease. It is encouraging to see innovative approaches, such as genetically targeted therapies, moving towards the clinic. This represents another important step towards a future with more options for the Alport community.”

**Lisa Bonebrake, Executive Director of the [Alport Syndrome Foundation \(ASF\)](#), a U.S. based non-profit patient organisation, said:** “Increased use of genetic testing in renal disease is demonstrating both the underdiagnosis and true scale of the unmet need in this rare kidney disease. Improved understanding of prevalence is critical for clinician and patient education, research investment, and development of potential therapies that can improve outcomes for individuals living with Alport Syndrome. During ASN Kidney Week, many clinicians shared with us that once they began integrating genetic testing into their clinical practice, they were surprised at the significant number of patients whose kidney disease symptoms are caused by underlying Alport Syndrome genetics.”

**Presentation details:**

**Title:** [GlomThera™ platform enables durable COL4A5 expression for the treatment of X-Linked Alport Syndrome](#)

**Session title:** Glomerular Diseases: Therapeutic Strategies Emerging from Basic Research [OR1401-2]

**Presenter:** Sarah Smith-Moore, Head of Cell and Molecular Biology, Purespring Therapeutics

**Title:** [The global mutational landscape in COL4A3, COL4A4 and COL4A5, and estimating the Alport Syndrome \(AS\) population](#)

**Session:** Noncystic Genetic Diseases: Multi-Omic Discovery and Emerging Therapeutic Approaches [OR1202]

**Presenter:** Fredrik Erlandsson, Chief Medical Officer, Purespring Therapeutics

**Ends**

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### **About Purespring**

Purespring Therapeutics is a clinical-stage precision nephrology company pioneering podocyte-targeted, genetically-driven therapies where unmet need is greatest.

The Company's proprietary, category-defining GlomThera™ platform is designed to enable local administration of lower dose genetic therapies directly to the podocyte – a specialised kidney cell implicated in a majority of glomerular disease – with the potential for durable treatment effects. Purespring's multi-asset pipeline is focused on renal indications affecting large and underserved patient populations. The Company's lead programmes span both monogenic and non-monogenic disease, targeting Alport Syndrome and IgA nephropathy (IgAN) respectively. PS-003 is advancing toward clinical development in Alport Syndrome, a rare inherited kidney disease with no approved targeted therapies, with the goal of addressing the underlying genetic cause and potentially modifying disease progression. PS-002, which is the first kidney-targeted gene therapy ever to have been administered to a patient, aims to evaluate a differentiated approach for IgAN patients with the goal of delivering durable efficacy and an improved safety profile.

Purespring is backed by leading biotech investors, including Syncona Limited, Sofinnova Partners, Gilde Healthcare, Forbion, and the British Business Bank, and has raised £115m (\$150m) to date.

For more information, please visit [purespringtx.com](http://purespringtx.com) and follow us on [LinkedIn](#).

### **About Alport syndrome**

Alport Syndrome is a monogenic kidney disorder caused by pathogenic variants in genes encoding for type IV collagen. These mutations disrupt the structure and integrity of the glomerular basement membrane, leading to progressive renal damage that can result in kidney failure. The X-linked Alport (XLAS) form, estimated to affect 1 in 2,230 individuals, typically presents in males during childhood or early adulthood with persistent haematuria, followed by proteinuria, hypertension and a declining renal function. Disease severity varies by genetic subtype, but progression in males with XLAS is often rapid, with many patients reaching end-stage kidney disease at a median age of 25. With no FDA approved therapies specifically targeting Alport Syndrome, most male patients diagnosed with XLAS will require haemodialysis and/or a kidney transplant. This highlights the urgent need for disease-modifying therapies that address the underlying cause of disease and can slow or prevent progression to kidney failure. PS-003 is designed to deliver the COL4A5 gene directly to the kidney in XLAS to restore local production of functional type IV collagen trimers with the potential to meaningfully transform patient outcomes.