For Immediate Release

ASX/Media Release

Dimerix to present at the 2nd World Congress for Clinical Trials in Diabetes

MELBOURNE, Australia, 22 November 2017: Dimerix Limited (ASX: DXB), a clinical stage biotechnology company announces that Associate Professor Dr David Packham has been invited to present both an oral and poster presentation at the 2nd World Congress for Clinical Trials in Diabetes between November 27-28 in Berlin, Germany.

The World Congress for Clinical Trials in Diabetes will bring together over 300 representatives from regulatory agencies and the pharmaceutical industry across a range of disciplines including endocrinologists, cardiologists, neurologists and nephrologists. The representatives are thought leaders in clinical trials for treatments for complications of diabetes, including kidney disease.

This presentation follows the release of detailed subgroup analysis that was presented at the American Society of Nephrology (ASN) in New Orleans on November 2, which highlighted compelling efficacy signals in diabetic nephropathy patients. In the presentations this week, Associate Professor Dr Packham will be discussing the details of the mechanism of action of DMX-200 in this significant patient group, and also a detailed safety analysis of this group.

The abstract describing the results was initially selected for a poster presentation, and subsequently deemed to be one of the most significant among the poster presentations and therefore also selected for oral presentation

According to the 2017 US Center for Disease Control (CDC) Chronic Kidney Disease Fact Sheet, around 44% of new diagnosis of Chronic Kidney Disease in the USA is due to diabetes. Estimates of the prevalence of Chronic Kidney Disease in the US from all causes vary form 10-15% of the adult population, making diabetic nephropathy a major and growing health problem.

Associate Professor Dr David Packham, Director of the Melbourne Renal Research Group said, “Preliminary efficacy data from the DMX-200 Phase 2a study suggests that clinically and statistically significant effects on proteinuria were observed in patients with diabetic nephropathy, which we believe may translate to improved renal functional outcomes.”

Kathy Harrison, Dimerix CEO said: “These types of conferences are key to to showcasing the DMX-200 program on the world stage, and are important for its commercialisation. We are grateful to have been given both a poster and oral presentation to promote the impact that DMX-200 had on patients in our phase 2a trial.”

The poster will be available for viewing from 9:00 am on Monday 27th November.

Details of the oral presentation

Session date / time:	Monday 27 November from 4:30 pm
Session title and details:	A Phase 2a Trial of DMX-200: Synergistic Blockade of AT1R and CCR2 in a Subgroup of Patients with Diabetic Nephropathy

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About Dimerix Bioscience Pty Ltd
Dimerix Limited's (ASX: DXB) wholly owned subsidiary Dimerix Bioscience Pty Ltd is a clinical-stage pharmaceutical company committed to discovering and developing new therapeutic models identified using its proprietary assay, termed Receptor-Heteromer Investigation Technology (Receptor-HIT). This assay enables the identification of pairs of receptors that function in a joint manner (interact) when ligands, small molecule drugs, peptides or antibodies, bind to them.

The Receptor-HIT technology was used to identify DMX-200 in an internal drug development program, initially for the treatment of a subset of patients with chronic kidney disease. In addition to its own therapeutic programs, the company also earns revenue by providing this technology to global pharmaceutical companies.

For more information see www.dimerix.com

About the DMX-200 program
DMX-200 which successfully completed a Phase 2a clinical trial in humans, is being developed as an adjunct therapy, adding propagermanuim to a stable dose of irbesartan. Irbesartan is an off-patent angiotensin II type I receptor blocker indicated for the treatment of hypertension and nephropathy in Type II diabetic patients. Propagermanium (PPG) is a chemokine receptor (CCR2) blocker, which has been used for the treatment of Hepatitis B in Japan and is available in the USA for its anti-inflammatory properties. DMX-200 has been shown to improve the outcome of chronic kidney disease by reducing proteinuria by more than 50 per cent in animal models [(1)].

Dimerix released the results of its Phase 2a clinical trial in humans for DMX-200 in July 2017. The trial met its primary endpoint of safety and tolerability in the participating patient group, which included patients with diabetic nephropathy (10), IgA nephropathy (6), and other proteinuric diseases (11). As a secondary endpoint, DMX-200 was shown to reduce levels of proteinuria in a number of patients. This was deemed a "clinically meaningful" result by leading clinicians. Preparations for a Phase 2b trial are underway which will test for efficacy and is expected to start by the end of calendar 2017.

About Chronic Kidney Disease
Chronic Kidney Disease (CKD) is a disorder in which patients show progressive loss of renal function usually accompanied by excess protein in the urine (proteinuria). Levels of proteinuria predict rate of decline of renal function (higher levels = more rapid decline). In part this is believed to reflect direct toxicity, or damage, to the kidneys by proteinuria itself. This establishes a cycle of worsening renal function leading in turn to increasing proteinuria and further kidney damage. Many CKD patients progress to a need for renal replacement therapy or dialysis and / or experience excessive morbidity and mortality from cardiovascular-related diseases.

The prevalence of CKD is rising and as such there is urgent need for treatments that can benefit CKD patients, including reducing proteinuria. In most cases of CKD residual proteinuria continues even with optimal use of existing therapies. Accordingly, therapies designed to further reduce, or abolish, proteinuria, are eagerly sought.

The rationale behind the DMX-200 program is to provide patients with a therapy that can reduce proteinuria in addition to that achieved with standard best therapy. The unmet need of CKD patients is reinforced by Dimerix's Orphan Drug Designation.

[(1)] Functional interaction between angiotensin II receptor type 1 and chemokine (C-C motif) receptor 2 with implications for chronic kidney disease. Ayoub MA, Zhang Y, Kelly RS, See HB, Johnstone EK, McCall EA, Williams JH, Kelly DJ, Pfleger KD. PLoS One. 2015 Mar 25;10(3):e0119803. doi: 10.1371/journal.pone.0119803.

A Phase 2a trial of DMX-200: synergistic blockade of AT1R and CCR2 in patients with Diabetic Nephropathy

David Packham[1], Stephen Holt[2], Paul Champion de Crespigny[2], Matthew Roberts[3], James Williams[4], Kathryn Harrison[4], David Power[5]

1, Melbourne Renal Research Group, Melbourne, Australia. 2, Royal Melbourne Hospital, Parkville, Australia.
3, Eastern Health, Box Hill, Australia. 4, Dimerix Bioscience Limited, Melbourne, Australia. 5, Austin Health, Heidelberg, Australia.

Background

DMX-200 is the adjunct therapy of propagermanium (organic germanium) and irbesartan for the treatment of patients with proteinuria

G-protein coupled receptors (GPCRs) are a large family of cell membrane receptors responsible for many physiological effects and are accordingly highly important drug targets. There is growing evidence that GPCRs function in complexes of two or more receptors called heteromers, with different pharmacology from the respective monomeric units. The cell-based Receptor-HIT assay (Dimerix Bioscience) was used to identified a heteromer between GPCRs chemokine receptor 2 (CCR2) and angiotensin II receptor type 1 (AT1R) - both known to play roles in the kidney.[1] Formation of the heteromer resulted in transactivation of the CCR2 receptor in response to AT1R activation, and dual agonist-mediated signaling from the complex was only fully reversed by treatment with antagonists for both receptors. Further, simultaneous inhibition with the organometallic small-molecule antagonist of CCR2, propagermanium, and the AT1R antagonist irbesartan in the subtotal nephrectomy rat model of focal segmental glomerulosclerosis led to decreased monocyte infiltration, lower proteinuria, reduced podocyte loss and prevention of renal injury independent of blood pressure. These data suggest a role for simultaneous inhibition of AT1R and CCR2 in proteinuric disease.

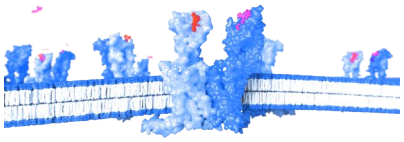


Figure 1: Cartoon of the CCR2 and AT1R heteromer, with ligands propagermanium (orange) and irbesartan (pink).

DMX-200-201 was an open-label, Phase 2a study designed to investigate the safety, tolerability and efficacy of escalating doses of propagermanium (30-240 mg/day) in patients with proteinuria already receiving stable irbesartan (75-300 mg) for at least 3 months prior to enrolment.

Study Design

Primary Objectives

- To determine the safety and tolerability of propagermanium when added to standard irbesartan treatment in participants with proteinuria

Primary Endpoints

- Incidence and severity of AEs
- Clinically significant changes in the safety profile of participants (biochemistry, hematology, urinalysis, physical examinations)

Secondary Objectives

- To evaluate the effects of propagermanium on various biomarkers when added to standard irbesartan in participants with proteinuria

Secondary Endpoints

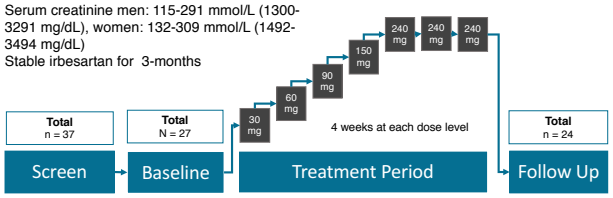
- The proportion of responders, defined as those participants achieving normalization of proteinuria or a 50% reduction in proteinuria

Key Inclusion Criteria

- Adults > 18 years
- PCR ≥ 50 mg/mmol (442 mg/g) over 24-hours
- eGFR 20-60 ml/min/1.73m^2
- Serum creatinine men: 115-291 mmol/L (1300-3291 mg/dL), women: 132-309 mmol/L (1492-3494 mg/dL)
- Stable irbesartan for 3-months

Key Exclusion Criteria

- Rapidly progressing proteinuria
- Receiving ACE, NSAID or spironolactone
- Uncontrolled blood pressure



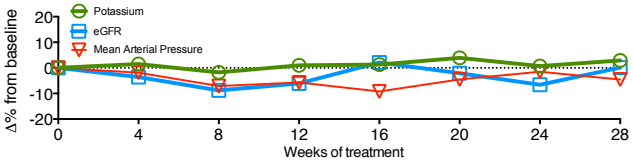
Study Population (n=10)

Of the 27 patients enrolled, 10 were chosen for post-hoc analysis based on a primary renal diagnosis of diabetic nephropathy. The diabetic subgroup demographics are noted below.

Age, sex	66 ± 9 years, range 50-79, male (n=9) female (n=1)
Irbesartan dose	75-300 mg/day, n=9 on 300 mg dose
Baseline PCR	256 ± 195 mg/mmol, range 70-700
Baseline eGFR	28 ± 13 mL/min/1.73m^2, range 17-59
Baseline serum K	4.7 ± 0.4 mmol/L (mg/L), range 4.3-5.6
Baseline BP	Systolic 145 ± 10 mmHg, range 123-157; Diastolic 77 ± 7 mmHg, range 69-89

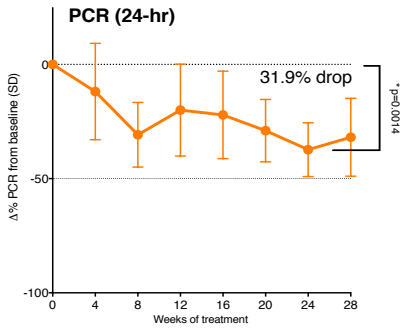
Safety

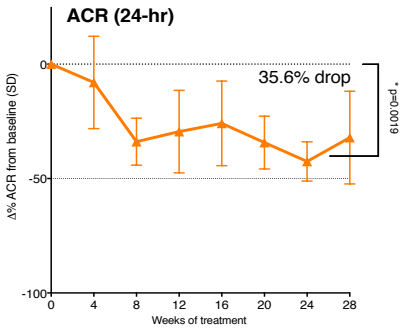
Simultaneous inhibition of AT1R and CCR2 is safe and well tolerated in patients with diabetic nephropathy with no clinically relevant effect on serum potassium, eGFR, and blood pressure

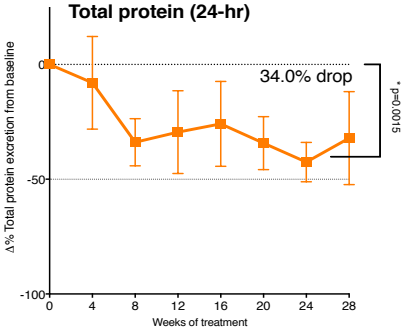


Post-hoc Analysis

- **24 patients completed dosing, with 6 reaching the pre-specified response criteria of normalization of proteinuria or a 50% reduction in proteinuria.**
- **Responders were concentrated among those with a primary renal diagnosis of diabetic nephropathy, with 83% (5/6) of responders having diabetic nephropathy**
- **50% (5/10) of diabetic nephropathy patients showed a greater than 50% reduction in PCR (24-hr) from baseline during treatment.**







Conclusions

- **Simultaneous inhibition of AT1R and CCR2 shows an encouraging safety profile in patients with diabetic nephropathy**
- **Post-hoc analysis suggests a significant reduction in proteinuria in patients with diabetic nephropathy.**
- **The reduction in proteinuria during treatment with DMX-200 in some patients warrants additional clinical investigation.**

Acknowledgments and References

The authors would like to acknowledge the support of study sponsor Dimerix Bioscience, preliminary research Liddy McCall and Kevin Pfleger, medical support David Fuller, site coordination Robyn Gibbs, Gloria Sepe, Annette Kent, Marieke Veenendaal, and administration Lauren Hanegraaf and Robert Shepherd.

[1] Ayoub, M., et al. (2015). Functional Interaction between Angiotensin II Receptor Type 1 and Chemokine (C-C Motif) Receptor 2 with Implications for Chronic Kidney Disease. *PLOS ONE*, *10*(3), e0119803

A Phase 2a Trial of DMX-200: Synergistic Blockade of AT1R and CCR2 in a Subgroup of Patients with Diabetic Nephropathy.

David Packham, Matthew A Roberts, Steven G Holt, James H Williams, Kathy M Harrison, David A Power.

WCTD 2017, Berlin

Financial disclosure

David Packham

Current advisory boards:

- AstraZeneca, Osaka Pharmaceuticals, Vifor, Dimerix

Financial holdings:

- Dimerix

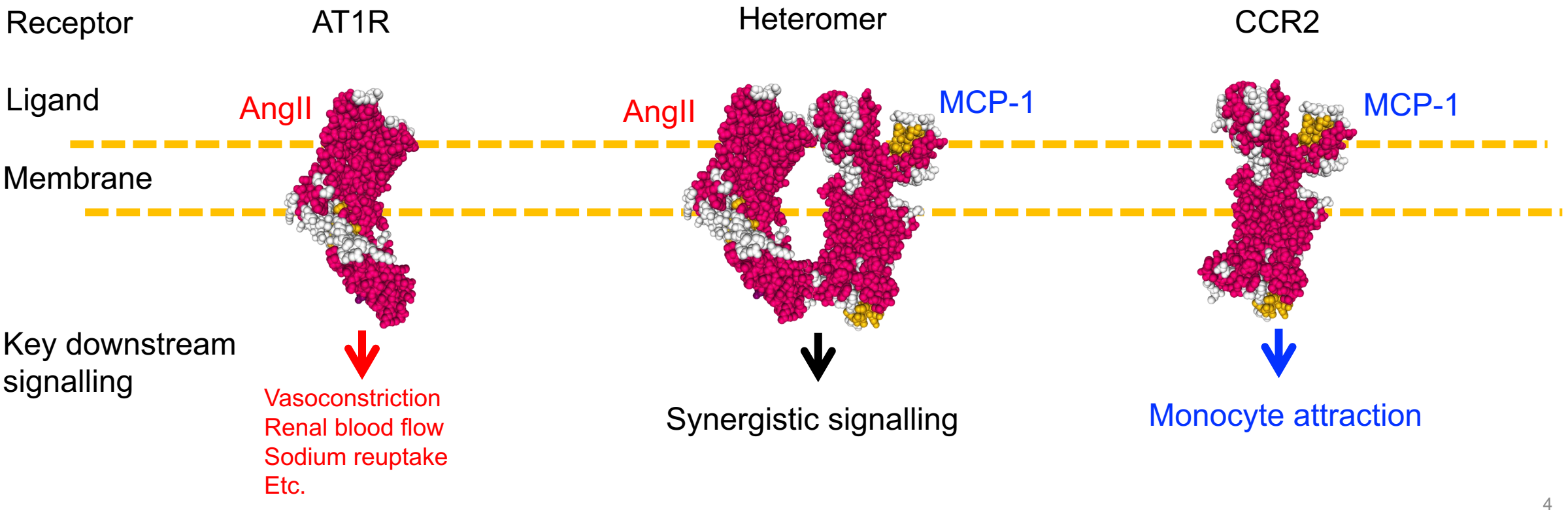
Ideal treatment for type 2 diabetic nephropathy

- Reduction in hyperfiltration and glomerular hypertension
  - Angiotensin II type 1 receptor inhibitors (AT1R)
- Prevention of interstitial monocyte and macrophage infiltration and fibrosis
  - Chemokine blockers (CCR2)
- Podocyte protection or repletion
  - Stem cells/progenitors?

Current clinical studies have focused on co-administration of AT1R inhibitors and CCR2 inhibitors

G-protein coupled receptors (GPCRs)

- AT1R and CCR2 are both GPCRs expressed on podocytes
- GPCRs transduce signals across the cell surface
- AT1R and CCR2 signal as monomers and hetromers



Simultaneous inhibition of AT1R and CCR2 abrogates monomer and heteromer signalling

AT1R

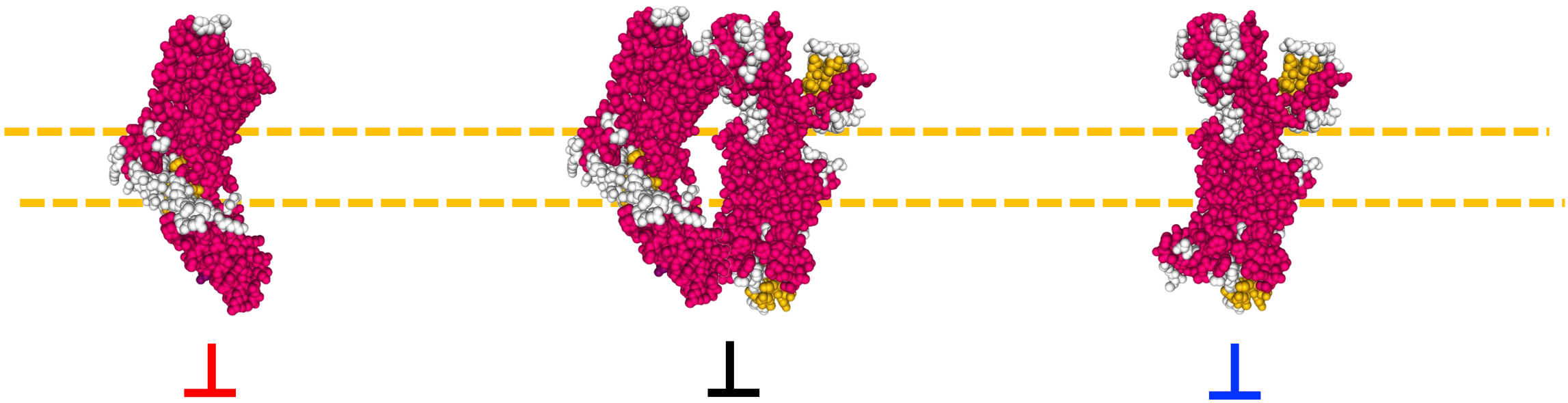
Antagonist: irbesartan (IRB)

Heteromer

Simultaneous inhibition

CCR2

Antagonist: propagermanium



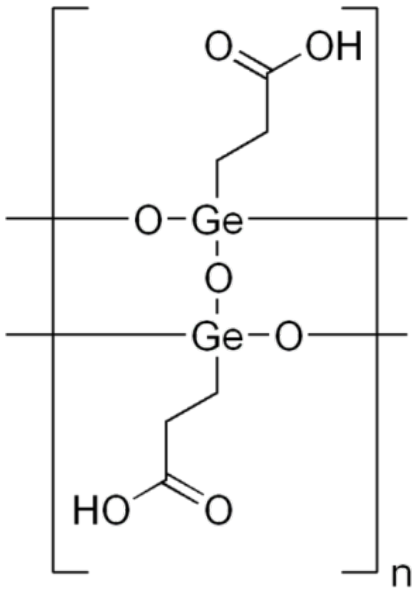
Vasoconstriction
Renal blood flow
Sodium reuptake
Etc.

Synergistic signalling

Monocyte attraction

CCR2 antagonist propagermanium (PPG)

- Propagermanium is a organometallic compound of germanium
- Drug substance licensed in Japan under trade name Serocion® for chronic hepatitis B since 1994, with 2,015 patients treated during trials.



Empiric Formula	$C_6H_{10}O_7Ge_2$
Molecular weight	339.42 g/mol
Chemical Name / IUPAC Name	3-[(2-Carboxyethyl-oxogermyl)oxy-oxogermyl]propanoic acid
Properties	White, odourless, microcrystalline powder

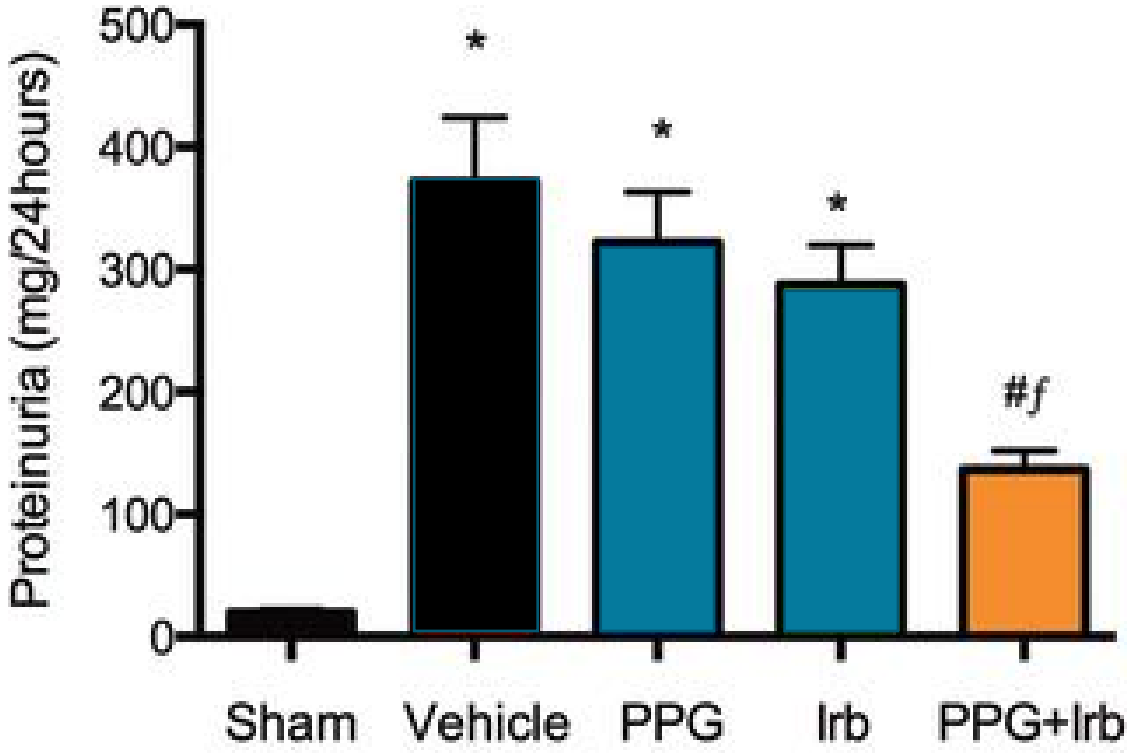
Simultaneous inhibition of AT1R and CCR2 in STNx rat model

STNx Model

A model of kidney disease (nephrotic syndrome): high proteinuria.

Sustained high proteinuria associated with long term renal damage in diabetic nephropathy and nephrotic syndrome.

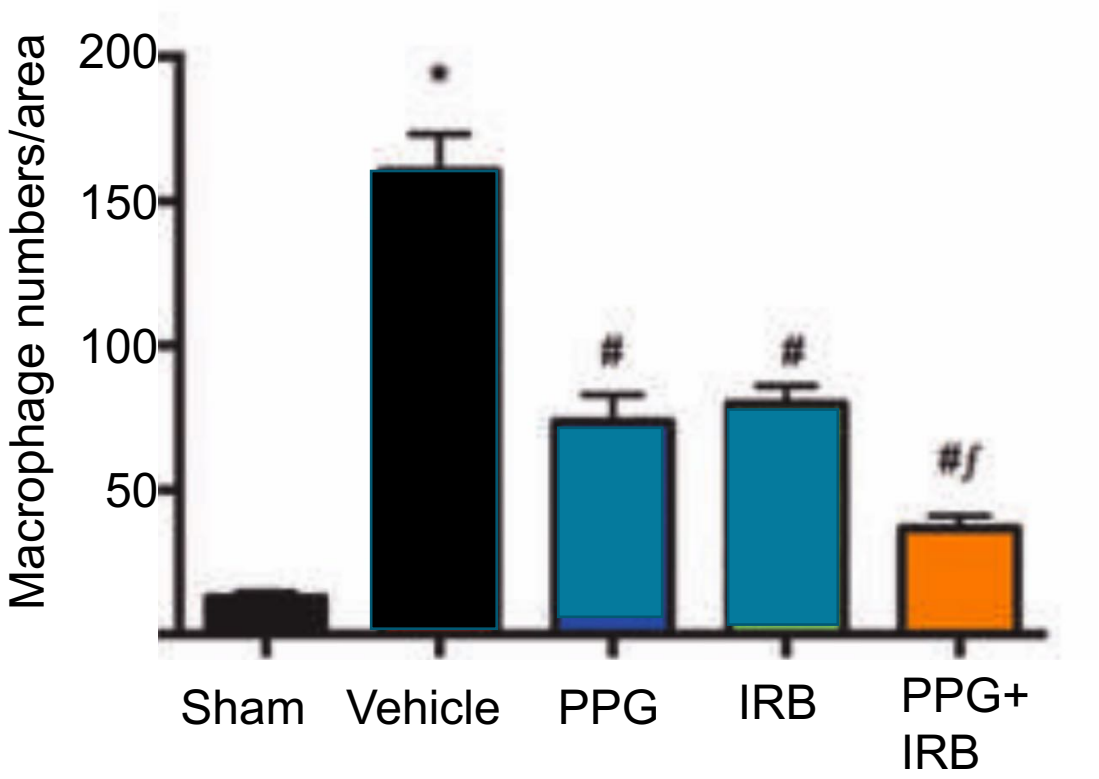
Reduced proteinuria



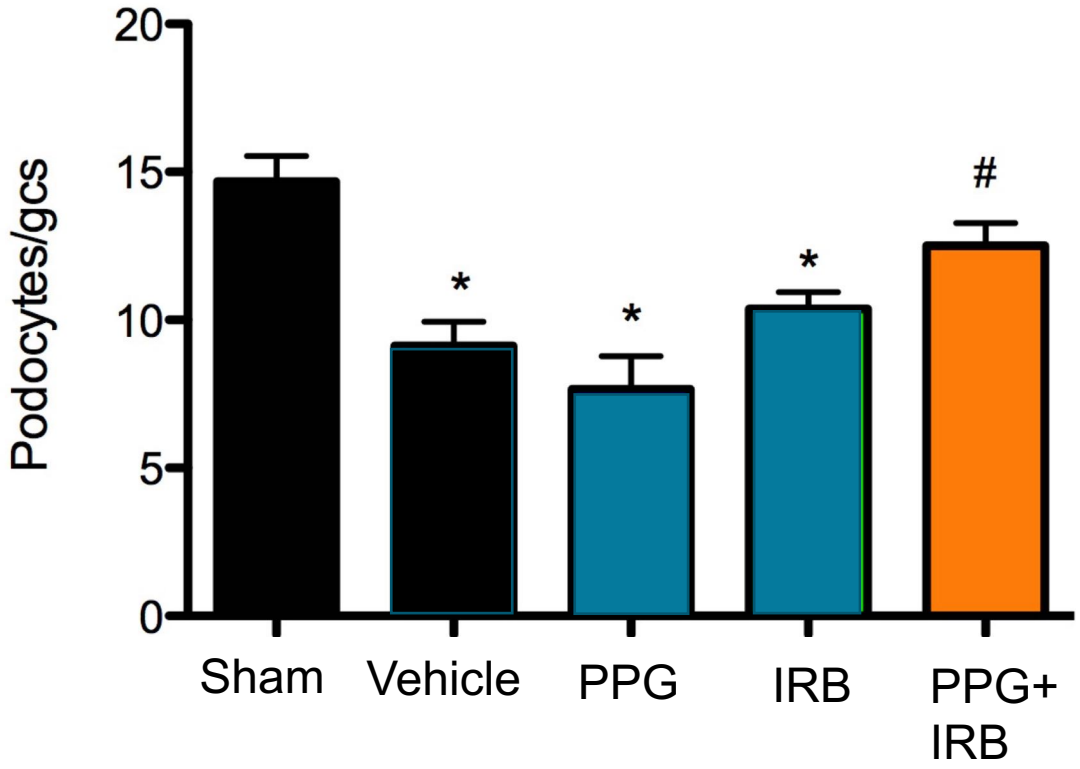
Ayoub MA, et al. (2015) PLoS ONE 10(3): e0119803. doi:10.1371/journal.pone.0119803

Simultaneous inhibition of AT1R and CCR2 in STNx rat model

Decreased macrophage infiltration



Preservation of podocyte numbers



Ayoub MA, et al. (2015) PLoS ONE 10(3): e0119803. doi:10.1371/journal.pone.0119803

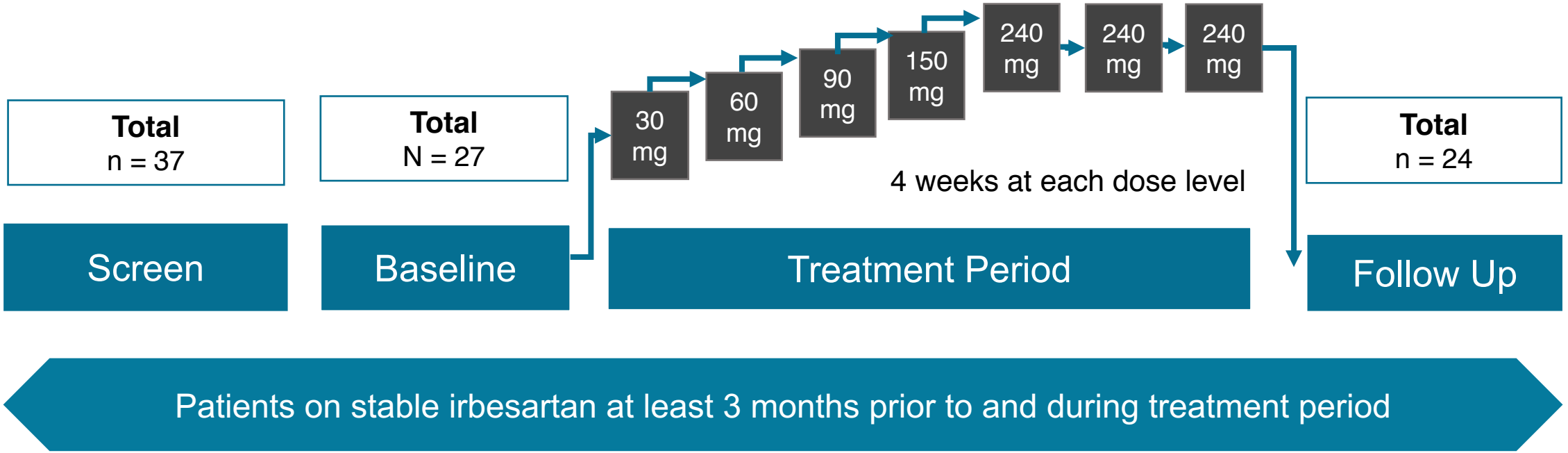
Study design Phase 2a

Primary Endpoints

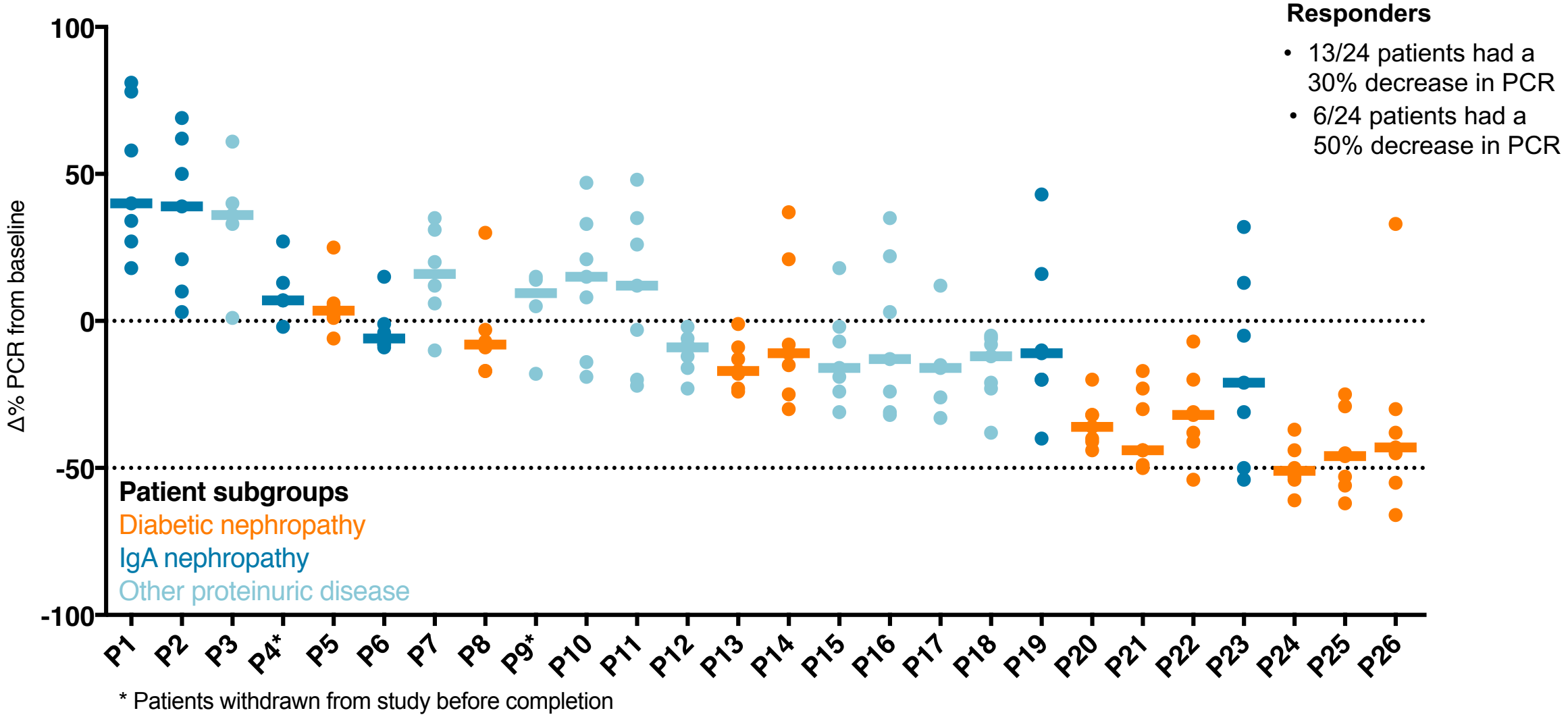
- Incidence and severity of Adverse Events
- Clinically significant changes in the safety profile of participants (biochemistry, hematology, urinalysis, physical examinations)

Secondary Endpoints

- The proportion of responders, defined as those participants achieving normalization of proteinuria or a 50% reduction in proteinuria

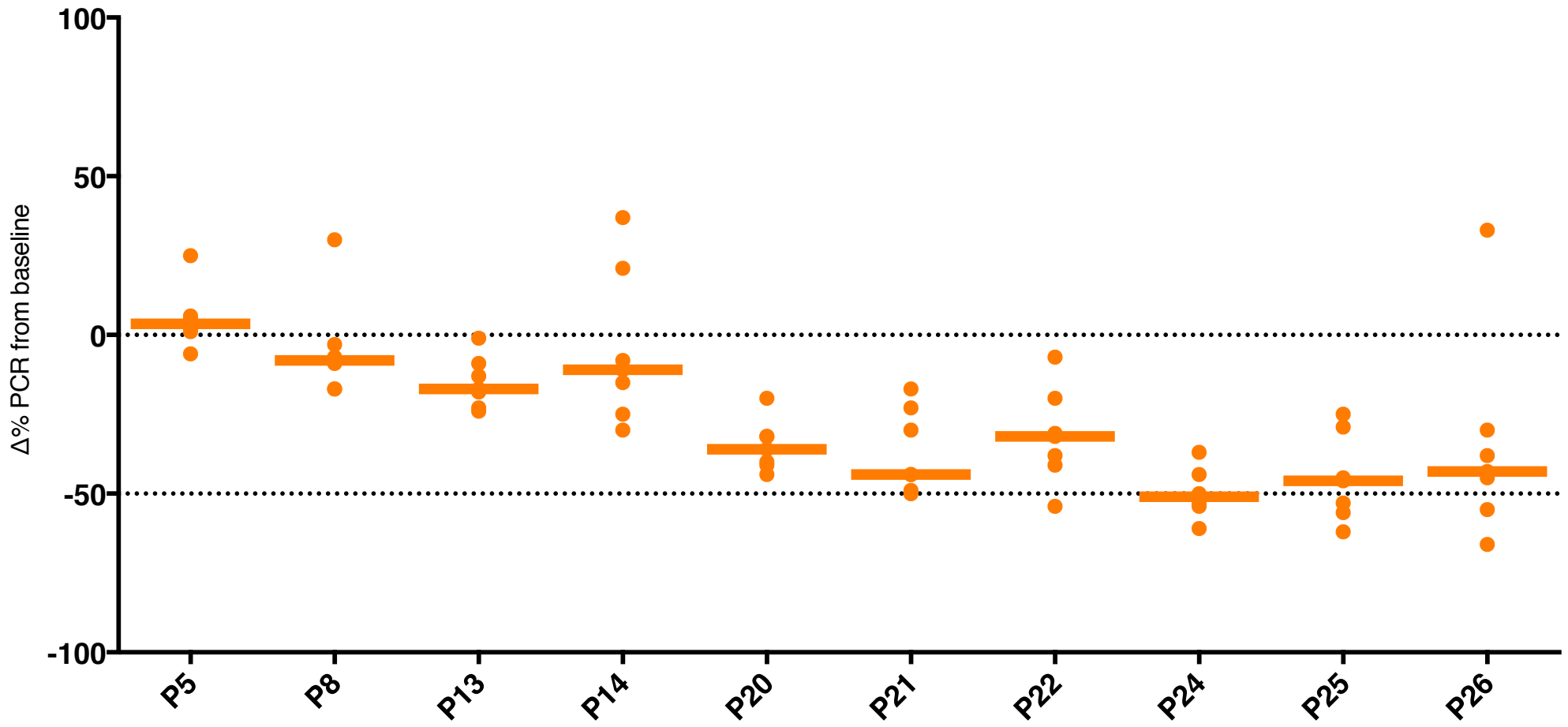


DMX-200 Phase 2a study summary (N=27)



* Patients withdrawn from study before completion

DMX-200 Phase 2a study summary (n=10)

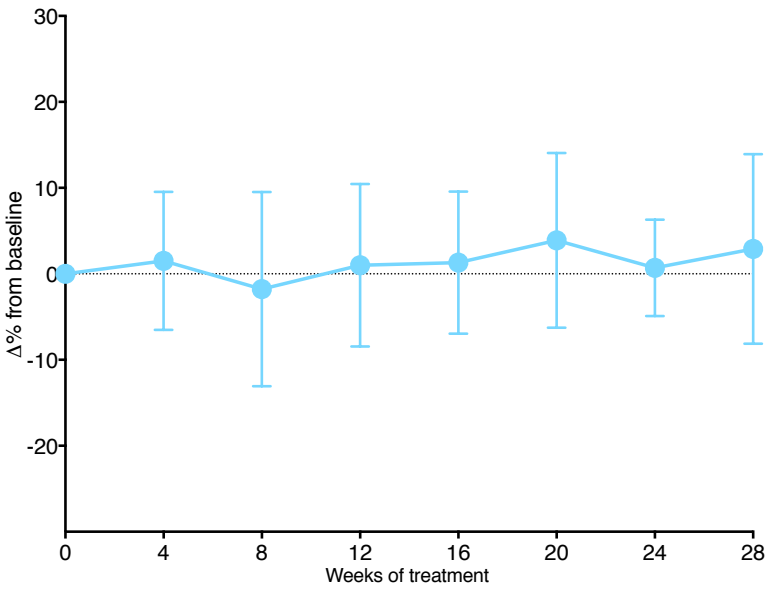


Diabetic patient demographics (n=10)

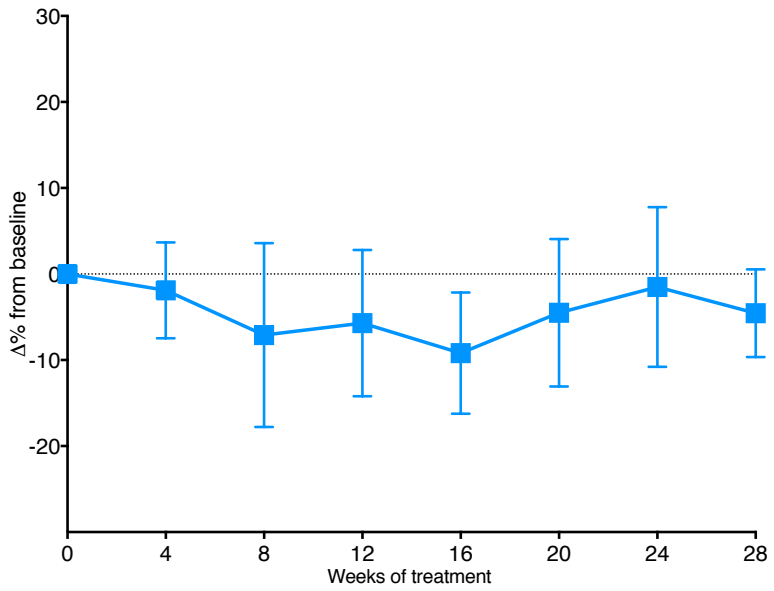
Age, sex	66 ± 9 years, range 50-79
Sex	Male (n=9) female (n=1)
Irbesartan dose	75-300 mg/day, n=9 on 300 mg dose
Baseline PCR	256 ± 195 mg/mmol, range 70-700
Baseline eGFR	28 ± 13 mL/min/1.73m^2, range 17-59
Baseline serum K	4.7 ± 0.4 mmol/L (mg/L), range 4.3-5.6
Baseline BP	Systolic 145 ± 10 mmHg, range 123-157 Diastolic 77 ± 7 mmHg, range 69-89

Key safety parameters (n=10)

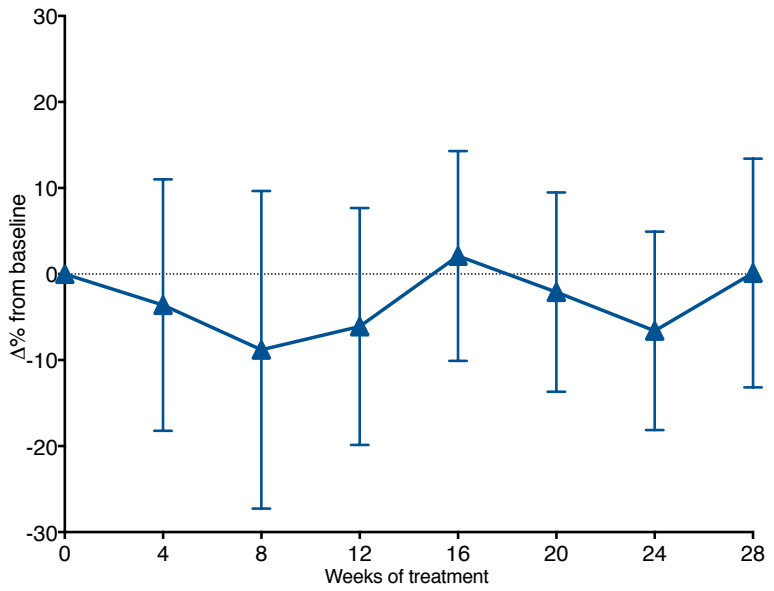
Serum potassium



Mean arterial pressure

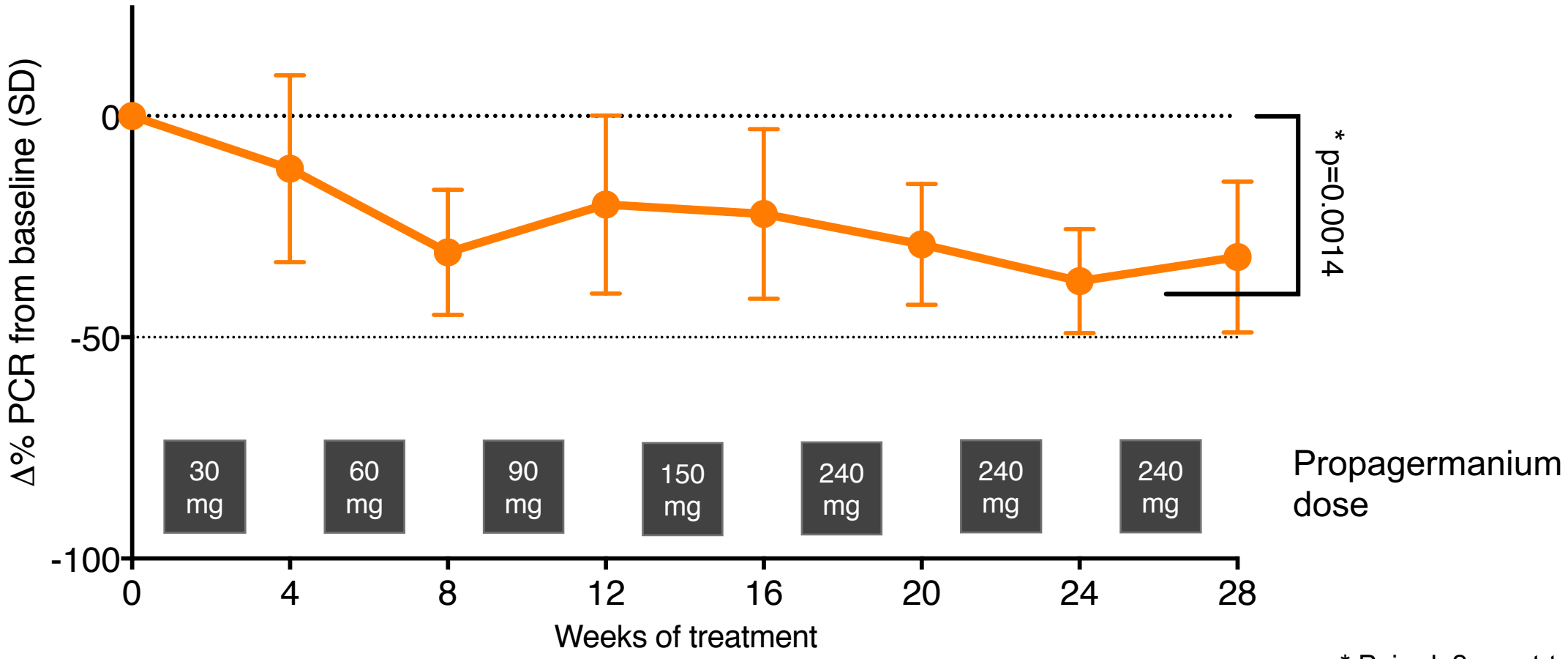


eGFR



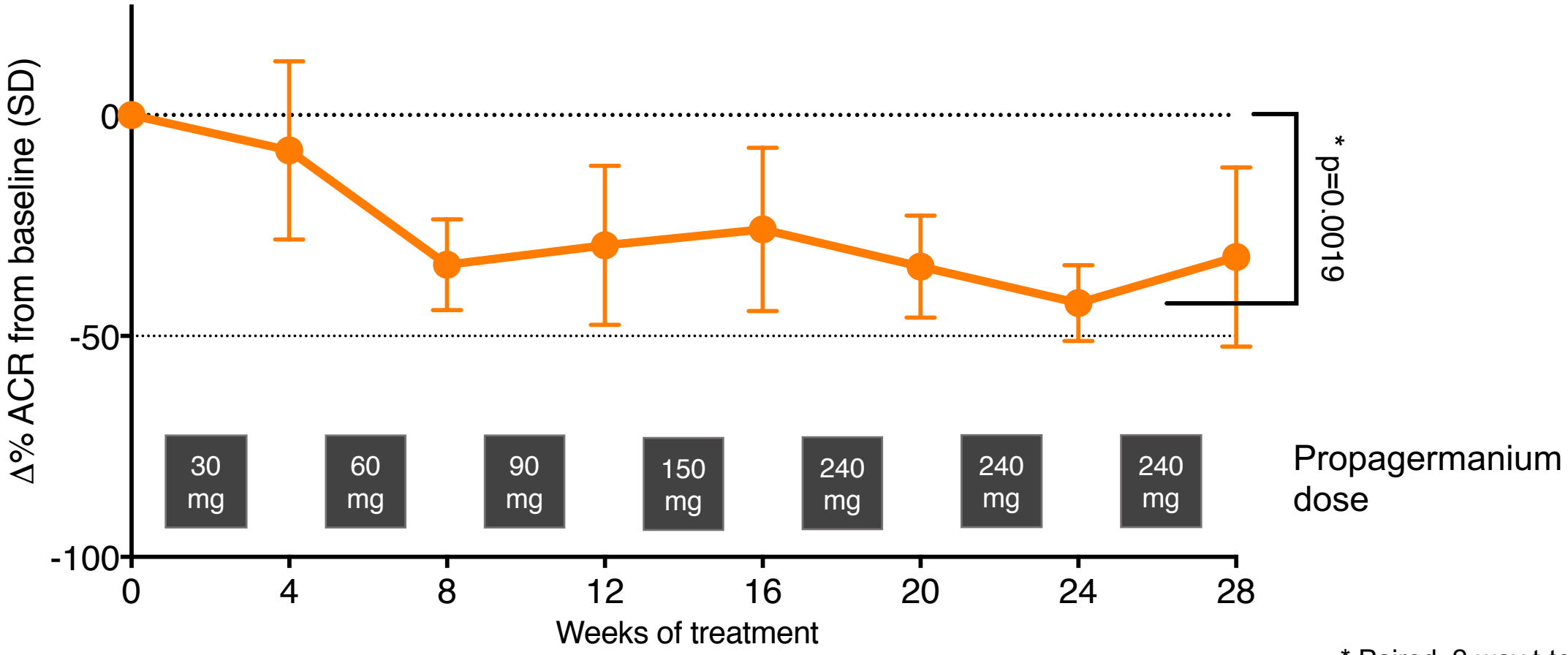
- Adverse Events (AEs) consistent with underlying co-morbidities
- One Serious Adverse Event (SAE) of cholecystitis and pancreatitis, not related with IP, patient continued study

PCR mean reduction 31.9% n=10



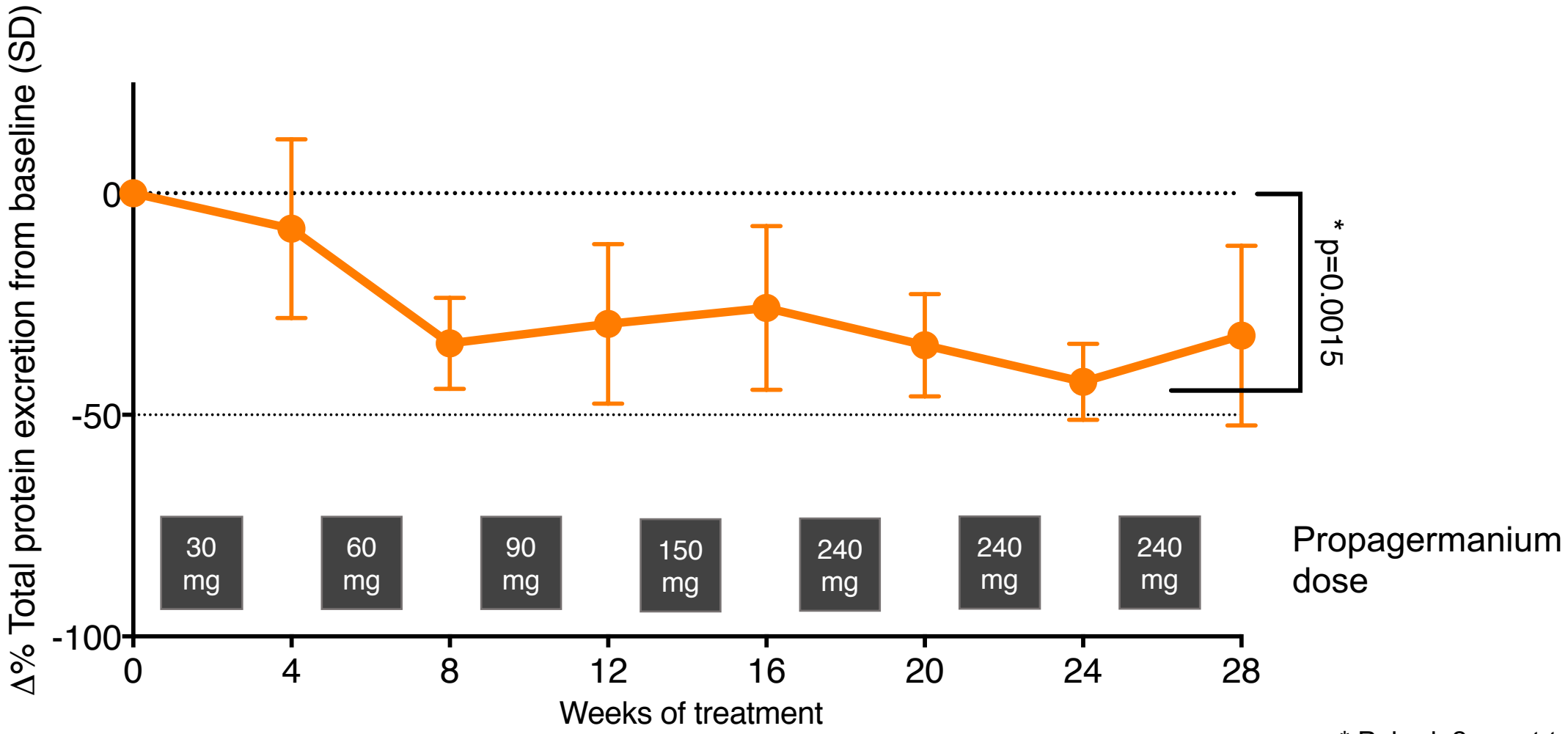
* Paired, 2-way t-test

ACR mean reduction 35.6% n=10



* Paired, 2-way t-test

Total protein mean reduction 34.0% n=10



* Paired, 2-way t-test

Conclusion

- AT1R and CCR2 form functional heteromers
- Combined inhibition of AT1R and CCR2 is safe in patients with type 2 diabetic nephropathy
- Preliminary efficacy suggests that patients with diabetic nephropathy appear to have clinically and statistically significant effects on proteinuria that may translate to improved renal functional outcomes
- DMX-200 warrants further development for patients with diabetic nephropathy