

**Table S2.** ARNi administration compared to ARB or ACEi monotherapy in preclinical models of other cardiovascular diseases.

Model of	Paper by	Species	Gavage protocol	Drug dosage (mg/kg/d)*	Findings*
HFpEF due to pressure overload	Burke [1]	12-wk-old ♂ C57Bl6/J mice	Started a day before TAC, cont. for 4 wks	Vehicle ARB 26 ARNi 57	↑↑ LVEF in ARNi ↓↓ Interstitial fibrosis and fibroblast population in ARNi ↓↓ Cardiomyocyte CSA and heart weight/tibial weight ratio in ARNi
	Lu [2]	♂ SD rats	Started 4 wks after TAC, cont. for 32 days	Vehicle Enalapril 7 ARNi 30	↓↓ Sarcomere-length, LV fibrotic area, cardiomyocyte size and lung injury in ARNi ↓↓ Expressions of profibrotic, pro-oxidative, pro-apoptotic, DNA-damage, mitochondrial-damage and volume overload markers in LV in ARNi
	Norden [3]	♂ Sprague-Dawley rats	8 wks	Vehicle ARB 31 ARNi 68	↓↓ LV weight in ARNi ↓↓ Diastolic dysfunction in ARNi No differences in LVEF and myocardial fibrosis between groups
	Suo [4]	8-10-wk-old ♂ C57BL/6J mice	Started 8 wks after TAC, cont. for 4 wks	Vehicle ARB 48 ARNi 60	↑↑ LVEF in ARNi ↓↓ Fibrosis in ARNi
HT	Hamano [5]	10-wk-old ♂ SHRcp fed high-salt diet	I: 6 mos, with high-salt diet II: Started after 6 mos of high-salt diet, cont. for 6 mos	Vehicle ARB 3 ARNi 6	↓ LV/body weight ratio in ARNi in Plan I ↓↓ LV/body weight and pulmonary edema in ARB in Plan II No differences in cardiomyocyte CSA and fibrosis between groups
	Kusaka [6]	11-wk-old ♂ SHRcp fed high-salt diet	4 wks	Vehicle ARB 30 ARNi 60	↓ LV in ARNi ↓↓ Myocardial fibrosis in ARNi ↓↓ Impairment of Ach-induced vascular relaxation in ARNi
	Seki [7]	8-11-mo-old SHRs	12 wks	Vehicle ARB 20 ARNi 60	Endothelium-dependent hyperpolarization-mediated responses improved similarly in ARB and ARNi
	Sung [8]	18-wk-old ♀ SHRs	2 wks	Vehicle ARB 160 ARNi 300	↓↓ Diastolic dysfunction and ↓↓ ventricular hypertrophy in ARNi ↓↓ Incidence of ventricular arrhythmias in ARNi No differences in LVEF between groups
	Tashiro [9]	8-wk-old ♂ C57BL/6J mice	Started on the 7 <sup>th</sup> day of Ang II infusion, cont. for 2 wks	Vehicle Enalapril 12 ARB 30 ARNi 60	↓↓ LV concentric hypertrophy in ARNi Myocyte CSA ↓ in ARB, ↓ in enalapril, and ↓↓ in ARNi No differences in fibrosis and TGFβ expression between groups
	Zhao [10]	12-wk-old ♀ SHRs	12 wks	Vehicle ARB 30 ARNi 60	LVEF ↑↑ in ARNi and ↑ in ARB ↓↓ LV mass in ARNi

					↓ Fibrosis, TGFβ expression and nNOS, eNOS protein expression in ARB and ARNi ↓↓ ACE, ATR1, and ↑↑ ACE2, MasR, ATR2 cardiac protein expression in ARNi
HF due to volume overload (by AVI)	Maslow [11]	♂ Sprague-Dawley rats	Started 4 wks after AVI, cont. for 4 wks.	Vehicle ARB 31 Sac 31 ARNi 68	Improved load-dependent indexes of left ventricle contractility and relaxation only in ARNi Improved load-independent index of contractility in ARB and ARNi ↑↑ Exercise tolerance in ARNi ↓↓ Myocardial fibrosis in ARNi
	Maslow [12]	♂ Sprague-Dawley rats	Started on the day of AVI, cont. for 8 wks.	Vehicle ARB 31 NEPi 31 ARNi 68	↑ LVEF in ARNi ↓ Myocardial fibrosis in ARB, NEPi, and ARNi ↑ Exercise tolerance in ARB and ARNi
HFpEF due to obesity	Aroor [13]	Zucker Obese rats	Started at 16 wks of age, cont. for 10 wks	Vehicle ARB 31 ARNi 68	↑ LVEF, ↓ fibrosis, and ↓ oxidative stress in ARB and ARNi ↑ Endothelial-dependent aortic relaxation in ARB and ARNi ↑↑ E'/a' ratio in ARNi
AF	Li [14]	♂ SPRD rats (200–250 g)	Started after AF induction, cont. for 4 wks	Vehicle ARB 48 ARNi 60	↑ LVEF in ARB and ARNi ↓↓ Atrial fibrosis and susceptibility to AF in ARNi
Myocarditis	Liang [15]	6-wk-old ♂ BALB/c mice	Started on the day of myocarditis, cont. for 3 wks	Vehicle ARB 10 ARNi 20	↓↓ Heart weight/body weight ratio, ↓↓ myocardial histopathologic scores, and ↓↓ cardiac troponin T levels in ARNi ↓↓ Serum hsCRP, IL6, and serum/myocardial IL17 levels in ARNi ↓↓ Th17 cells and their transcription factors in myocardial tissue in ARNi
CKD	Suematsu [16]	♂ SPRD rats (175–215 g)	Started 2 wks after nephrectomy, cont. for 8 wks.	Vehicle ARB 30 ARNi 60	Heart weight/body weight ratio, myocyte CSA, markers of oxidative stress, myocardial and aortic fibrosis ↓↓ in ARNi and ↓ in ARB ↓↓ expression of NF-κB and COX-2 in ARNi

Abbreviations: ACE – angiotensin-converting enzyme; ACE2 – angiotensin-converting enzyme 2; Ach – acetylcholine; AF – atrial fibrosis; ARNi – sacubitril/valsartan; ARB – valsartan; ATR1 – angiotensin II receptor type 1; ATR2 – angiotensin II receptor type 2; AVI – aortic valve insufficiency; COX-2 – cyclooxygenase 2; CKD – chronic kidney disease; cont. – continued; CSA – cross-sectional area; eNOS – endothelial nitric oxide synthase; HFpEF – heart failure with preserved ejection fraction; hs CRP – high-sensitivity C-reactive protein; HT – hypertension; IL – interleukin; LV – left ventricle; LVEF – left ventricle ejection fraction; MasR – Mas receptor; mo – month; NEPi – sacubitril; NF-κB – nuclear factor kappa-light-chain-enhancer of activated B cells; nNOS – neuronal nitric oxide synthase; TAC – transverse aortic constriction; TGFβ – transforming growth factor β; SHRs – spontaneously hypertensive rats; wk - week. Symbols: ↑/↓ – significantly increased/decreased compared to placebo; ↑↑/↓↓ – significantly increased/decreased compared to placebo and other treatments, ♂ – male, ♀ – female.

\* Groups and results presented in the Table were chosen due to their importance for the review, they do not exhaust all of the results presented in selected papers.

## References

1. Burke, R.M.; Lighthouse, J.K.; Mickelsen, D.M.; Small, E.M. Sacubitril/Valsartan Decreases Cardiac Fibrosis in Left Ventricle Pressure Overload by Restoring PKG Signaling in Cardiac Fibroblasts. *Circ. Heart Fail.* 2019, 12, e005565.
2. Lu, H.-I.; Tong, M.-S.; Chen, K.-H.; Lee, F.-Y.; Chiang, J.Y.; Chung, S.-Y.; Sung, P.-H.; Yip, H.-K. Entresto therapy effectively protects heart and lung against transverse aortic constriction induced cardiopulmonary syndrome injury in rat. *Am. J. Transl. Res.* 2018, 10, 2290–2305.
3. Nordén, E.S.; Bendiksen, B.A.; Andresen, H.; Bergo, K.K.; Espe, E.K.; Hasic, A.; Hauge-Iversen, I.M.; Veras, I.; Hussain, R.I.; Sjaastad, I.; et al. Sacubitril/valsartan ameliorates cardiac hypertrophy and preserves diastolic function in cardiac pressure overload. *ESC Heart Fail.* 2021, 8, 918–927.
4. Suo, Y.; Yuan, M.; Li, H.; Zhang, Y.; Li, Y.; Fu, H.; Han, F.; Ma, C.; Wang, Y.; Bao, Q.; et al. Sacubitril/Valsartan Improves Left Atrial and Left Atrial Appendage Function in Patients With Atrial Fibrillation and in Pressure Overload-Induced Mice. *Front. Pharmacol.* 2019, 10, 1285.
5. Hamano, G.; Yamamoto, K.; Takami, Y.; Takeshita, H.; Shimosato, T.; Moritani, T.; Rakugi, H. Effects of Low-Dose Sacubi-tril/Valsartan on Different Stages of Cardiac Hypertrophy in Salt-Loaded Hypertensive Rats. *J. Cardiovasc. Pharmacol.* 2019, 73, 282–289.
6. Kusaka, H.; Sueta, D.; Koibuchi, N.; Hasegawa, Y.; Nakagawa, T.; Lin, B.; Ogawa, H.; Kim-Mitsuyama, S. LCZ696, Angiotensin II Receptor-Neprilysin Inhibitor, Ameliorates High-Salt-Induced Hypertension and Cardiovascular Injury More Than Valsartan Alone. *Am. J. Hypertens.* 2015, 28, 1409–1417.
7. Seki, T.; Goto, K.; Kansui, Y.; Ohtsubo, T.; Matsumura, K.; Kitazono, T. Angiotensin II Receptor–Neprilysin Inhibitor Sacu-bitril/Valsartan Improves Endothelial Dysfunction in Spontaneously Hypertensive Rats. *J. Am. Heart Assoc.* 2017, 6, e006617.
8. Sung, Y.L.; Lin, T.T.; Syu, J.Y.; Hsu, H.J.; Lin, K.Y.; Liu, Y.B.; Lin, S.F. Reverse Electromechanical Modelling of Diastolic Dys-function in Spontaneous Hypertensive Rat after Sacubitril/Valsartan Therapy. *ESC Heart Fail.* 2020, 7, 4040–4050.
9. Tashiro, K.; Kuwano, T.; Ideishi, A.; Morita, H.; Idemoto, Y.; Goto, M.; Suematsu, Y.; Miura, S.I. Sacubitril/Valsartan Inhibits Cardiomyocyte Hypertrophy in Angiotensin II-Induced Hypertensive Mice Independent of a Blood Pressure-Lowering Effect. *Cardiol. Res.* 2020, 11, 376–385.
10. Zhao, Y.; Ma, R.; Yu, X.; Li, N.; Zhao, X.; Yu, J. AHU377+Valsartan (LCZ696) Modulates Renin–Angiotensin System (RAS) in the Cardiac of Female Spontaneously Hypertensive Rats Compared With Valsartan. *J. Cardiovasc. Pharmacol. Ther.* 2019, 24, 450–459.
11. Maslov, M.Y.; Foianini, S.; Mayer, D.; Orlov, M.V.; Lovich, M.A. Interaction Between Sacubitril and Valsartan in Preventing Heart Failure Induced by Aortic Valve Insufficiency in Rats. *J. Card. Fail.* 2019, 25, 921–931.
12. Maslov, M.Y.; Foianini, S.; Mayer, D.; Orlov, M.V.; Lovich, M.A. Synergy between sacubitril and valsartan leads to hemo-dynamic, antifibrotic, and exercise tolerance benefits in rats with preexisting heart failure. *Am. J. Physiol. Circ. Physiol.* 2019, 316, H289–H297.
13. Aroor, A.R.; Mummidi, S.; Lopez-Alvarenga, J.C.; Das, N.; Habibi, J.; Jia, G.; Lastra, G.; Chandrasekar, B.; DeMarco, V.G. Sacubitril/Valsartan Inhibits Obesity-Associated Diastolic Dysfunction through Suppression of Ventricular-Vascular Stiffness. *Cardiovasc. Diabetol.* 2021, 20, 80.
14. Li, S.N.; Zhang, J.R.; Zhou, L.; Xi, H.; Li, C.Y.; Zhao, L. Sacubitril/Valsartan Decreases Atrial Fibrillation Susceptibility by Inhibiting Angiotensin II-Induced Atrial Fibrosis through P-Smad2/3, P-Jnk, and P-P38 Signaling Pathways. *J. Cardiovasc. Transl. Res.* 2022, 15, 131–142.
15. Liang, W.; Xie, B.K.; Ding, P.W.; Wang, M.; Yuan, J.; Cheng, X.; Liao, Y.H.; Yu, M. Sacubitril/Valsartan Alleviates Experimental Autoimmune Myocarditis by Inhibiting Th17 Cell Differentiation Independently of the Nlrp3 Inflammasome Pathway. *Front. Pharmacol.* 2021, 12, 727838.
16. Suematsu, Y.; Jing, W.; Nunes, A.; Kashyap, M.L.; Khazaeli, M.; Vaziri, N.D.; Moradi, H. LCZ696 (Sacubitril/Valsartan), an Angiotensin-Receptor Neprilysin Inhibitor, Attenuates Cardiac Hypertrophy, Fibrosis, and Vasculopathy in a Rat Model of Chronic Kidney Disease. *J. Card. Fail.* 2018, 24, 266–275.