

## patterns in acute exercise and exercise training

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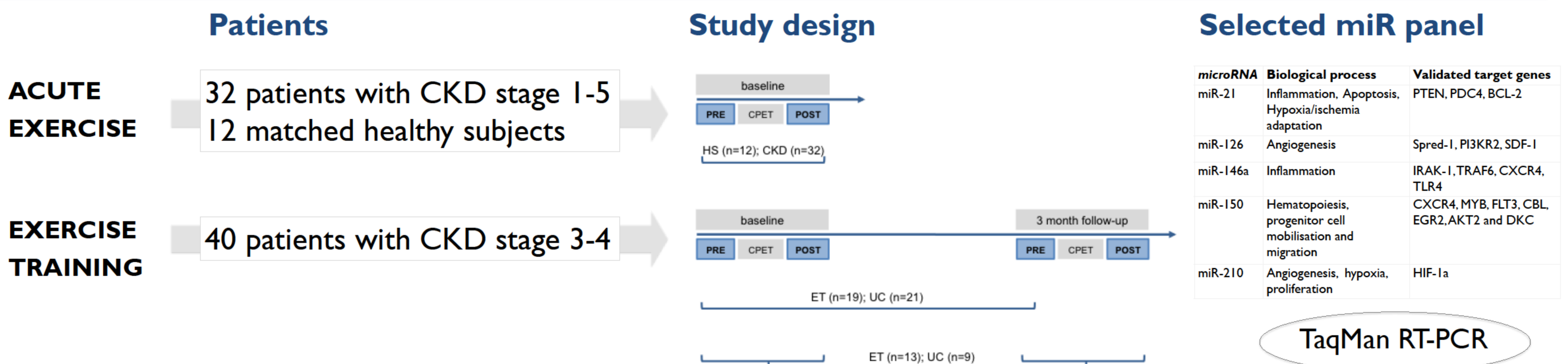
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### INTRODUCTION AND OBJECTIVES

- Exercise training is an effective way to improve exercise capacity in predialysis CKD
- MicroRNA (miRNA or miR) have been suggested as regulators of cardiovascular adaptation to exercise

- AIMS**
- To examine the effects of an **acute exercise** bout on plasma levels of a selected miR panel in patients with CKD compared to age-matched healthy volunteers
  - To evaluate whether plasma levels of a selected miR panel *at rest* and *after acute exercise* are influenced by an aerobic **exercise training** program of 3 months in CKD

### METHODS



### RESULTS

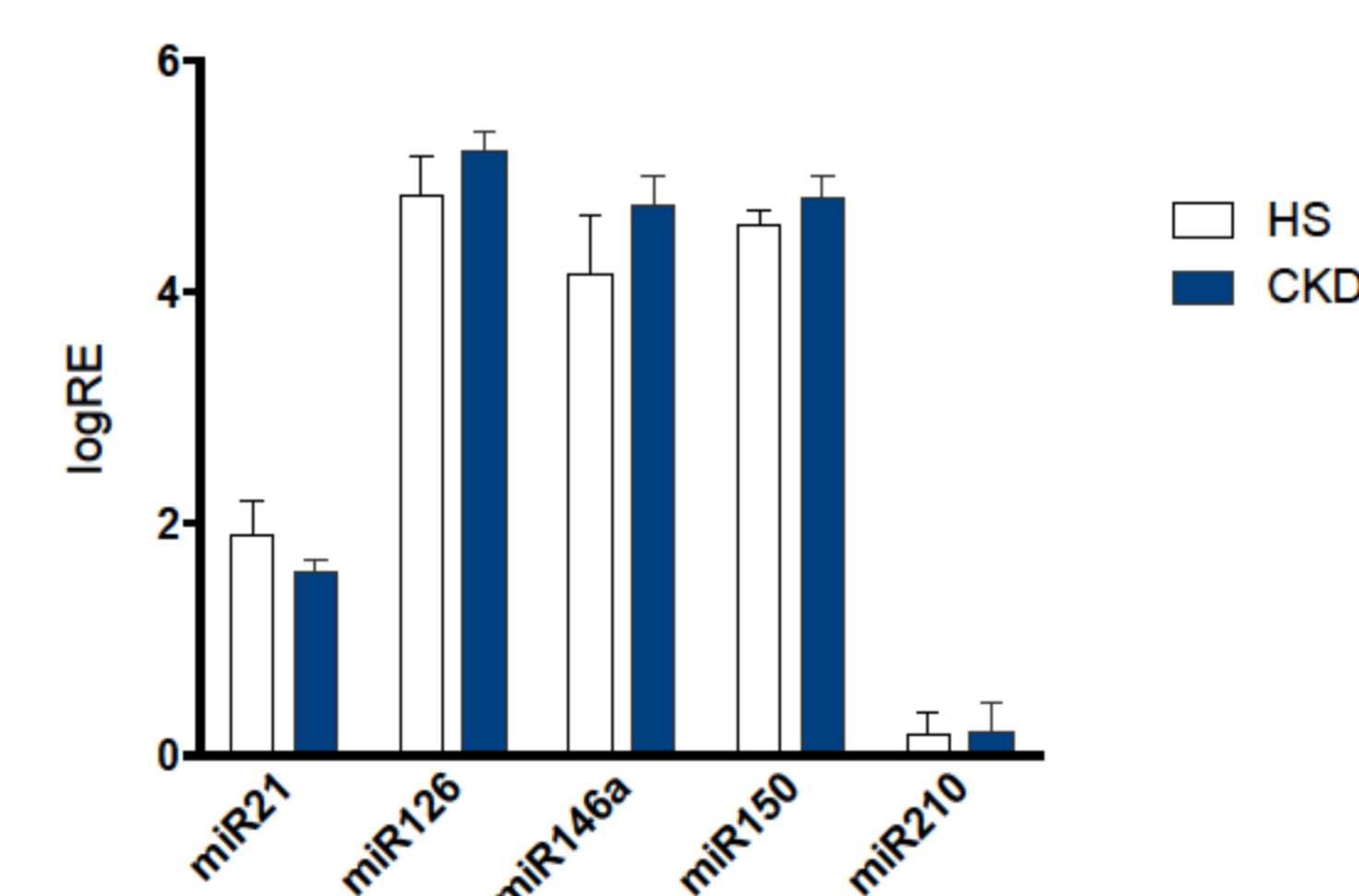
#### Patients' characteristics

#### ACUTE EXERCISE

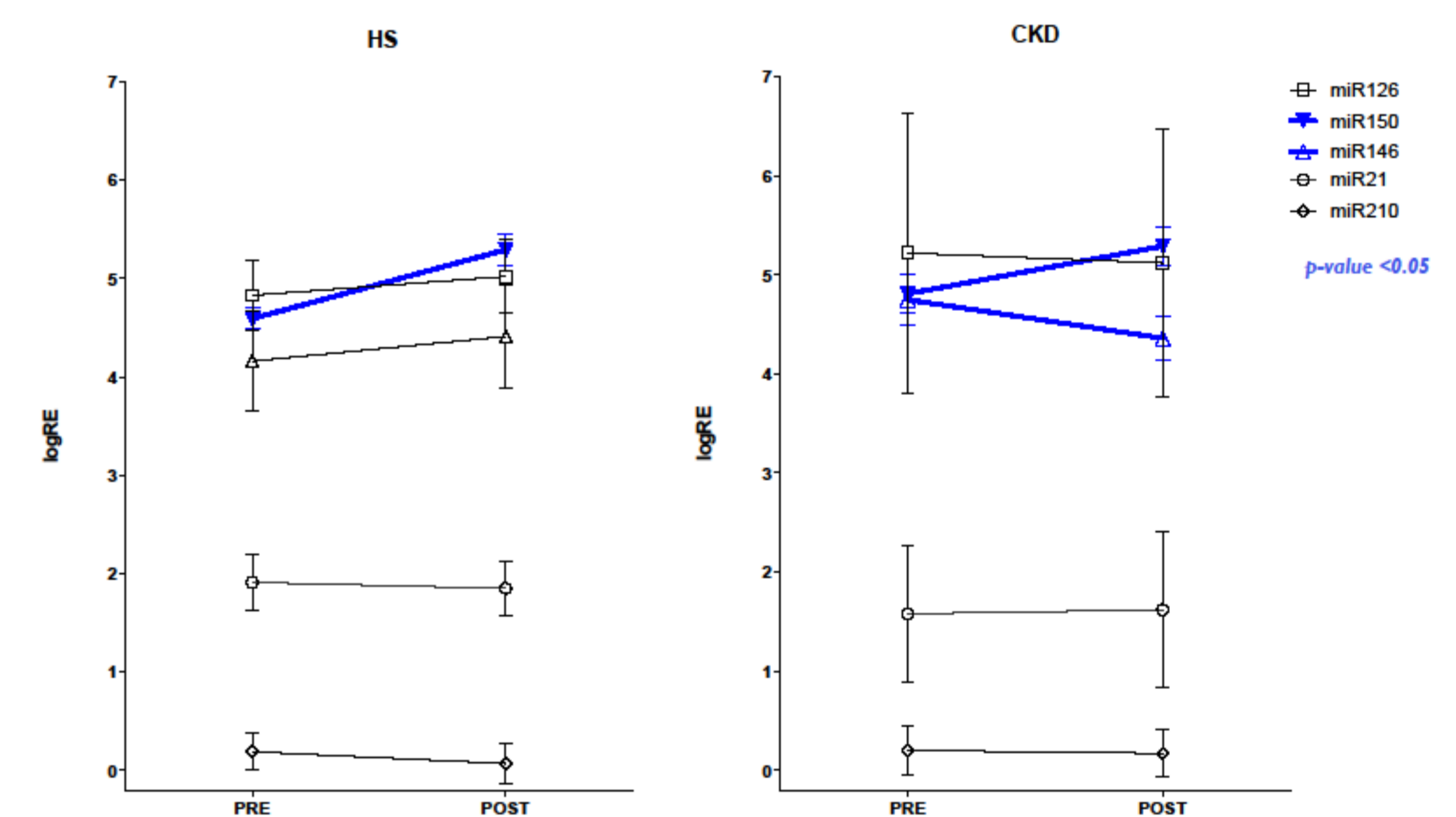
	CKD	HS	p-value
Age (years)	49.6 ± 15.3	43.4 ± 4.7	0.179
Sex (F/M)	18/14	5/7	0.388
BMI (kg/m <sup>2</sup> )	26.7 ± 5.3	23.7 ± 2.2	0.012
eGFR (ml/min/1.73 m <sup>2</sup> )	46.2 ± 23.8	101.4 ± 9.7	<0.001
Systolic blood pressure (mmHg)	125 ± 15	125 ± 13	0.935
Diastolic blood pressure (mmHg)	81 ± 12	79 ± 9	0.520
VO <sub>2</sub> peak (ml/kg/min)	26.1 ± 8.0	38.5 ± 9.8	0.002

#### Acute exercise

#### Plasma levels baseline



#### Effect of a maximal exercise bout



#### EXERCISE TRAINING

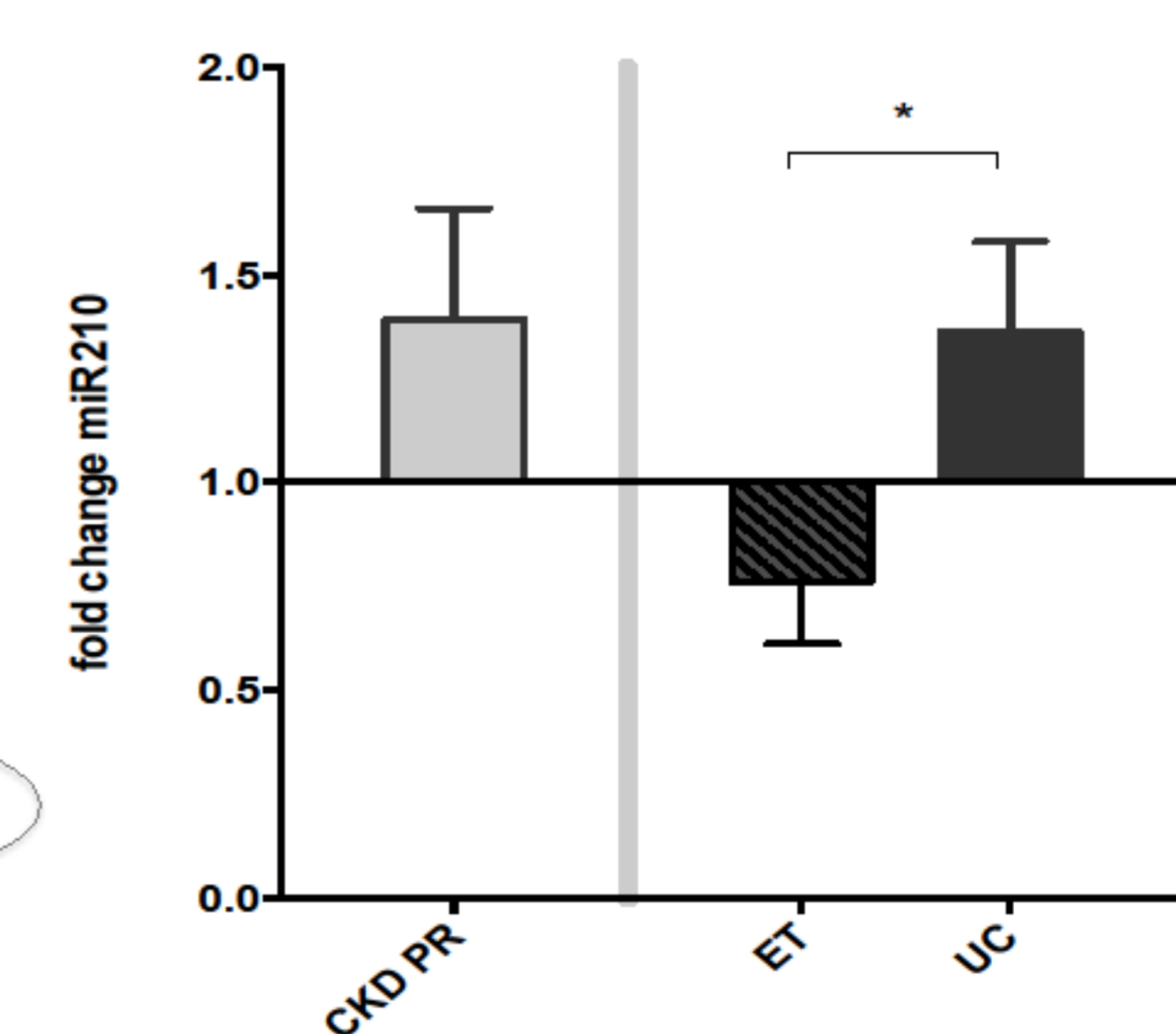
	UC (n=21)	ET (n=19)	p-value
Age (years)	54.7 ± 14.1	51.5 ± 11.8	0.441
Sex (F/M)	10/11	8/11	0.726
BMI (kg/m <sup>2</sup> )	28.3 ± 5.8	28.3 ± 6.2	0.965
eGFR (ml/min/1.73 m <sup>2</sup> )	42.2 ± 14.9	40.2 ± 15.2	0.665
Systolic blood pressure (mmHg)	123 ± 16	129 ± 17	0.259
Diastolic blood pressure (mmHg)	79 ± 11	81 ± 13	0.740
VO <sub>2</sub> peak (ml/kg/min)	24.4 ± 6.6	26.4 ± 5.4	0.287

#### Exercise training

#### Plasma levels baseline

Following exercise training, the level of plasma miR-210 was significantly downregulated in comparison with UC

#### Effect of a maximal exercise bout



### CONCLUSION

- The differential expression in plasma microRNA following acute exercise and exercise training in CKD points towards a possible physiological role in cardiovascular adaptation to exercise
- Future studies evaluating miR behaviour over a longer time period might shed more light on the beneficial effects of exercise training and point towards novel therapeutic targets in CKD