

Controlled Oxygenated Rewarming without Organ Disconnection: In Vitro Characterization of Liquid Exchange Efficacy

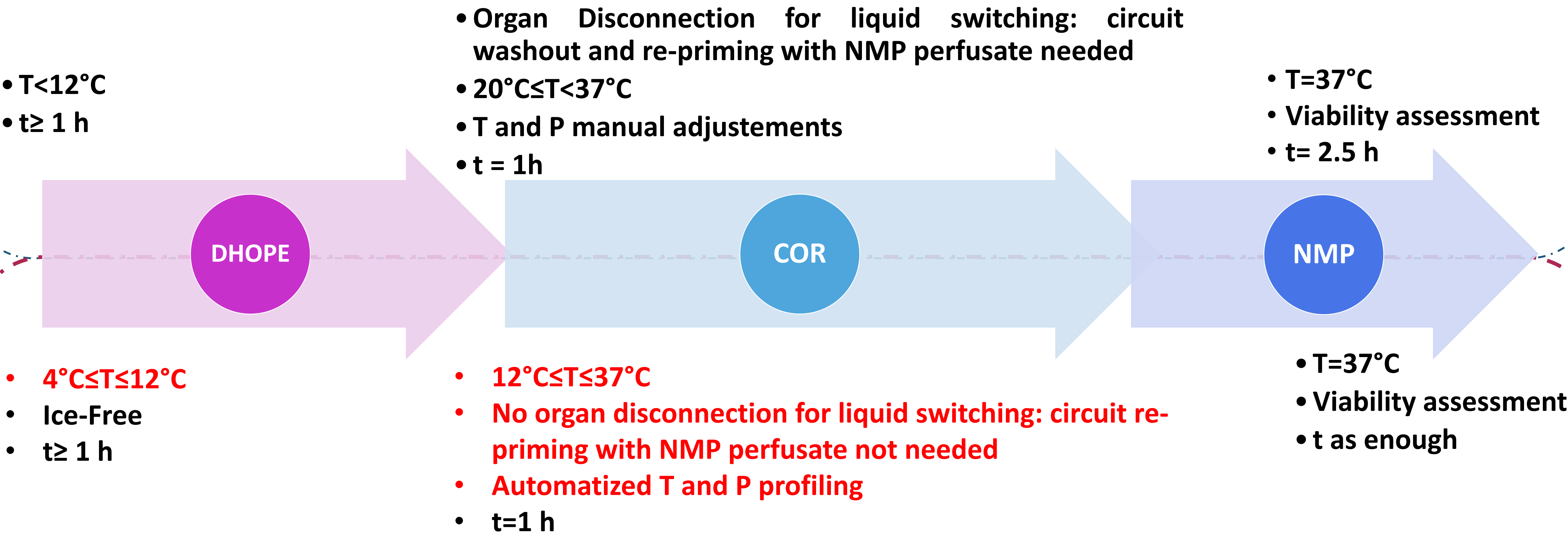
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Introduction

State-of-Art DHOPE-COR-NMPc

Not ischemic-free COR (organ disconnection for liquid switching)
Not eliminated temperature-shift gap ($12^{\circ}\text{C} < T < 21^{\circ}\text{C}$ not covered)

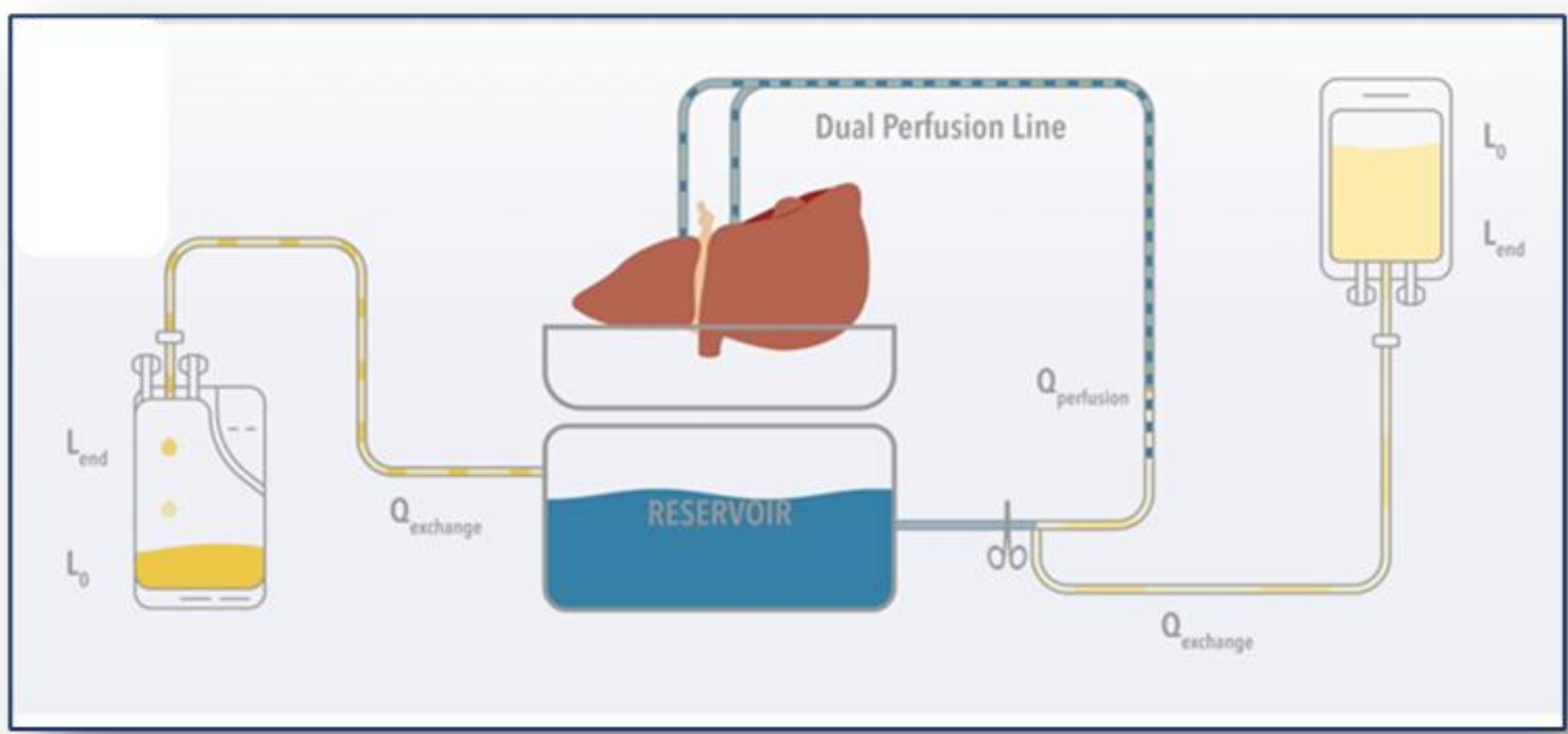


Ischemia-free perfusate switching
No T gap

Aferetica DHOPE-COR-NMPc

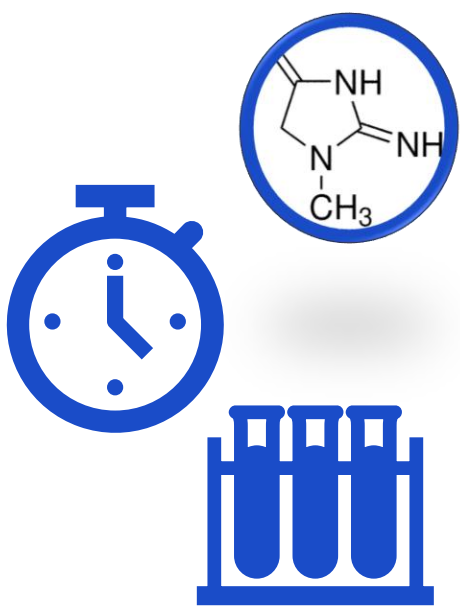
Methods, Results and Conclusion

Mathematical Model showed <2% residual DHOPE liquid after the fluid exchange step of the COR



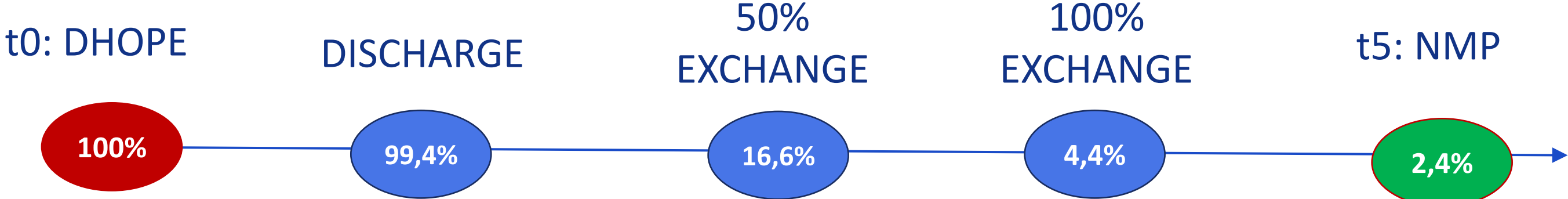
t (min)	Q _{out} (ml/min)	Q _{inf} (ml/min)	Mass Exchanged	Pump Protect (ml) t _x	% Pump Protect	Emagel (ml) tx	% Emagel	Red Cell (ml)	Drugs (ml)
0	300	300	4500			0		780	500
1				1.200	80%	300	20%		
.....									
15				52,78	3,5%	1.447	96,5%		
t _x	After RBC and drugs infusion				1,9%		52,1%	28,1%	18,0%

4 Experiments using Creatinine levels to characterize liquid exchange efficacy in the protocol



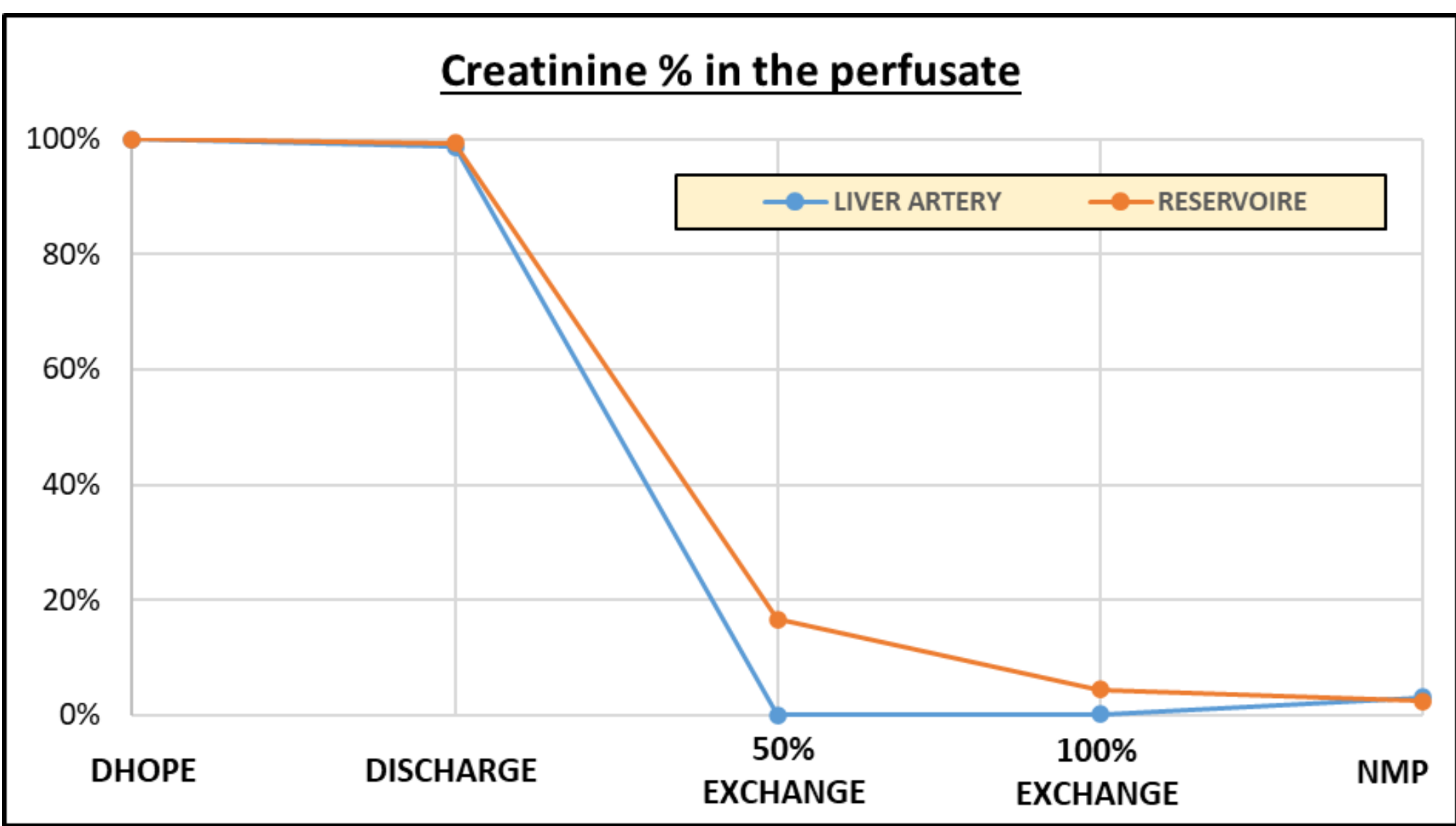
Creatinine as target molecule:

- solubility
- ease of measurement
- no interference with liver metabolism
- HPLC blinded measurement



$$\text{EXCHANGE EFFICACY (EE)} = \left(\frac{\text{Crea}_{t_5}}{\text{Crea}_{t_0}} \right) * 100$$

$$\text{EE} = 2,4\%$$



Highly efficient liquid exchange, leading to full complete perfusate switching from DHOPE to NMP phases, with negligible DHOPE fluid residuals.