

Interplay of methylglyoxal and immune cells

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Propositions

accompanying the dissertation

Interplay of methylglyoxal and immune cells: implications for type 2 diabetes?

- 1. The formation of methylglyoxal in plasma, immune cells, and in tissues during a glucose tolerance test originates from exogenous glucose (this dissertation).
- 2. Intake of exogenous methylglyoxal does not directly affect immune cell numbers and inflammation (this dissertation).
- 3. Methylglyoxal plays a role in the induction of trained immunity in monocytes/macrophages (this dissertation).
- 4. The associations between fasting plasma methylglyoxal concentrations and cell number/activation of circulating intermediate monocytes indicate a role of methylglyoxal in the aetiology of cardiovascular disease in people with type 2 diabetes (this dissertation).
- 5. The formation of methylglyoxal in immune cells is a potential target for intervention
- 6. The potential involvement of trained immunity in hyperglycaemic memory complicates the research for therapeutic modalities to target inflammation.
- 7. Experimental work with methylglyoxal should meet at least three conditions: the use of highly purified methylglyoxal, physiological concentrations of methylglyoxal, and the use of proteins minimally modified by methylglyoxal.
- 8. The more we know about methylglyoxal, the more we realize that it is not just a toxic and dangerous side product.
- 9. There is no such thing as a failed experiment, only experiments with unexpected outcomes (Richard Buckminster Fuller).
- 10. Research is to see what everybody else has seen, and to think what nobody else has thought (Albert Szent-Györgyi).
- 11. Science never solves a problem without creating ten more (George Bernard Shaw).