Interplay of methylglyoxal and immune cells

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).

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