



Lipogenesis in arterial wall and vascular smooth muscular cells: regulation and abnormalities in insulin-resistance

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- **Abstract (provisional)**
- Vascular smooth muscular cells (VSMC) express lipogenic genes. Therefore in situ lipogenesis could provide fatty acids for triglycerides synthesis and cholesterol esterification and contribute to lipid accumulation in arterial wall with aging and during atheroma.

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- **Abstract (provisional)**
- **Methods.** We investigated expression of lipogenic genes in human and rat arterial walls, its regulation in cultured VSMC and determined if it is modified during insulin-resistance and diabetes, situations with increased risk for atheroma.

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- **Abstract (provisional)**
- Results. Zucker obese (ZO) and diabetic (ZDF) rats accumulated more triglycerides in their aortas than their respective control rats, and this triglycerides content increased with age in ZDF and control rats. However the expression in aortas of lipogenic genes, or of genes involved in fatty acids uptake, was not higher in ZDF and ZO rats and did not increase with age. Expression of lipogenesis-related genes was not increased in human arterial wall (carotid endarterectomy) of diabetic compared to non-diabetic patients. In vitro, glucose and adipogenic medium (ADM) stimulated moderately the expression and activity of lipogenesis in VSMC from control rats. LXR agonists, but not PXR agonist, stimulated also lipogenesis in VSMC but not in arterial wall in vivo. Lipogenic genes expression was lower in VSMC from ZO rats and not stimulated by glucose or ADM.

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- **Abstract (provisional)**
- **Conclusion:** Lipogenic genes are expressed in arterial wall and VSMC; this expression is stimulated (VSMC) by glucose, ADM and LXR agonists. During insulin-resistance and diabetes, this expression is not increased and resists to the actions of glucose and ADM. It is unlikely that this metabolic pathway contribute to lipid accumulation of arterial wall during insulin-resistance and diabetes and thus to the increased risk of atheroma observed in these situations