Adipokine Visfatin Induces Redox Molecular Trafficking and Dysfunction in Coronary Endothelial Cells

Department of Pharmacology and Toxicology
Virginia Commonwealth University
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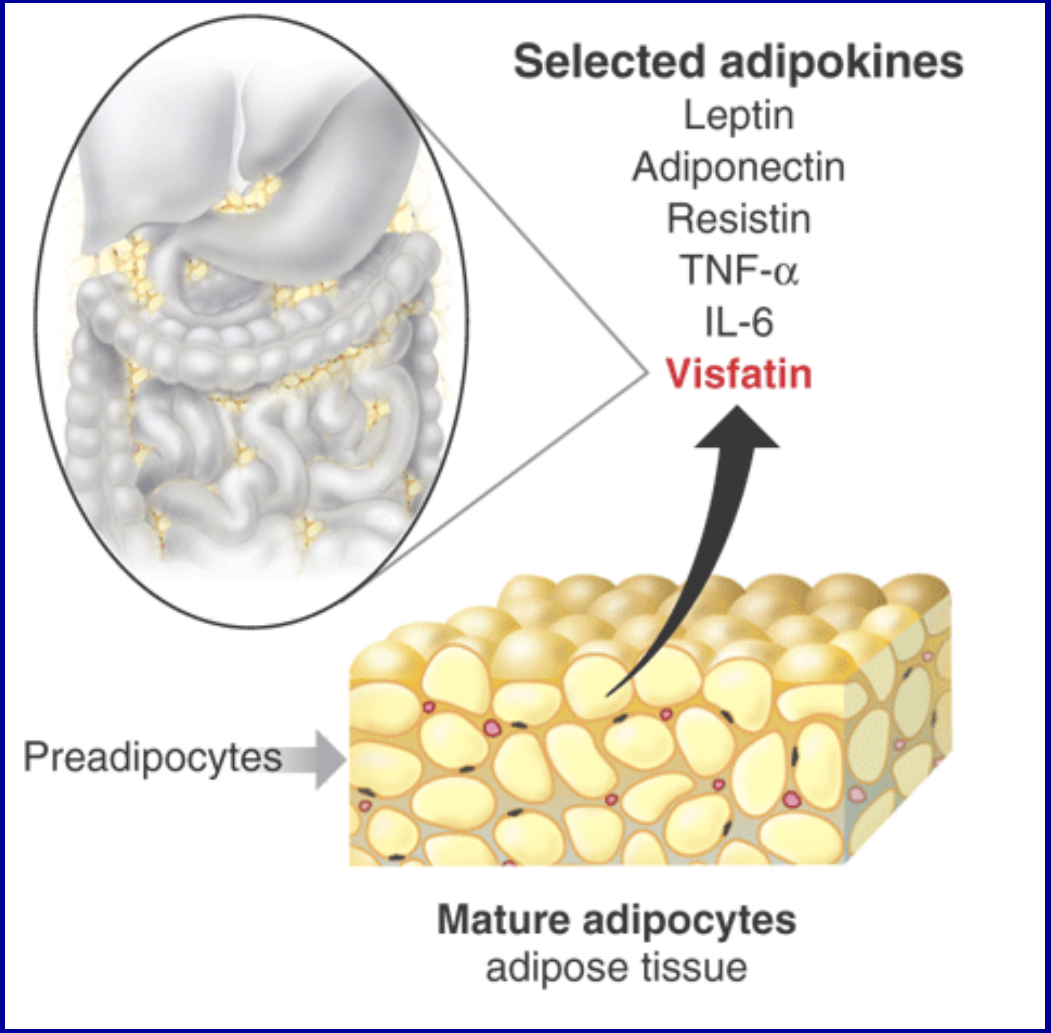
Jessica B. Cardwell

Background

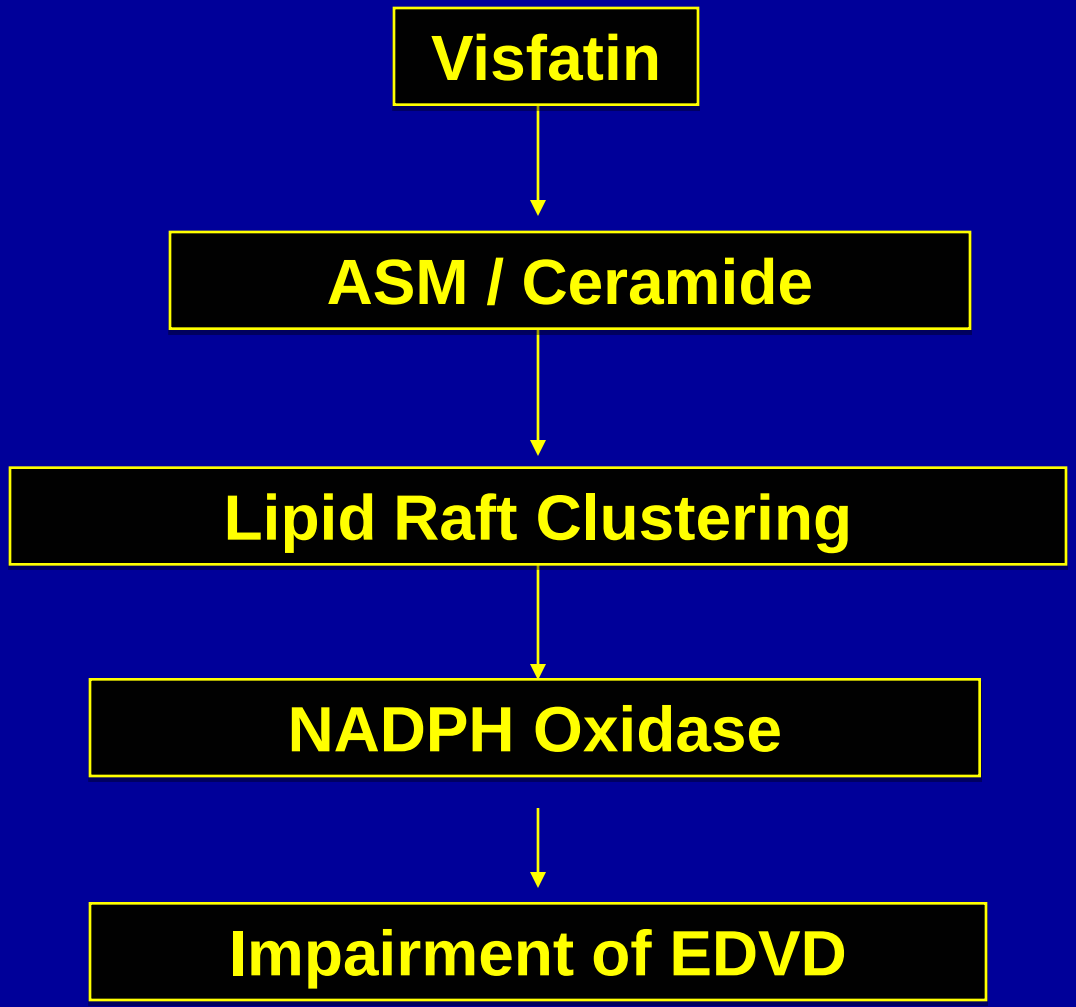

Selected adipokines
Leptin
Adiponectin
Resistin
TNF-α
IL-6
Visfatin
Preadipocytes
Mature adipocytes
adipose tissue

Background

- Visfatin, a recently discovered adipocytokine, was found at high levels in obesity, type 2 diabetes and chronic kidney disease patients.

- Our studies show that visfatin can induce the impairment of the Endothelium Dependent Vasodilation.

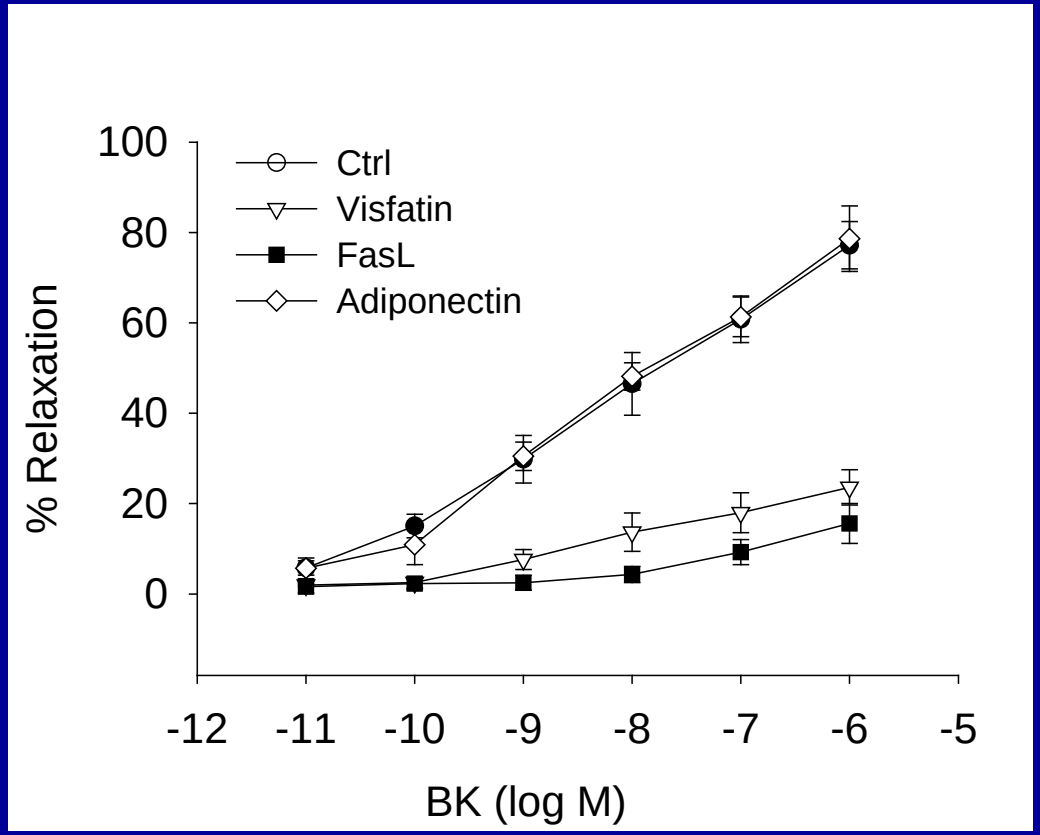
Hypothesis


Visfatin
ASM / Ceramide
Lipid Raft Clustering
NADPH Oxidase
Impairment of EDVD

Question 1

Whether Visfatin can influence vessel function?

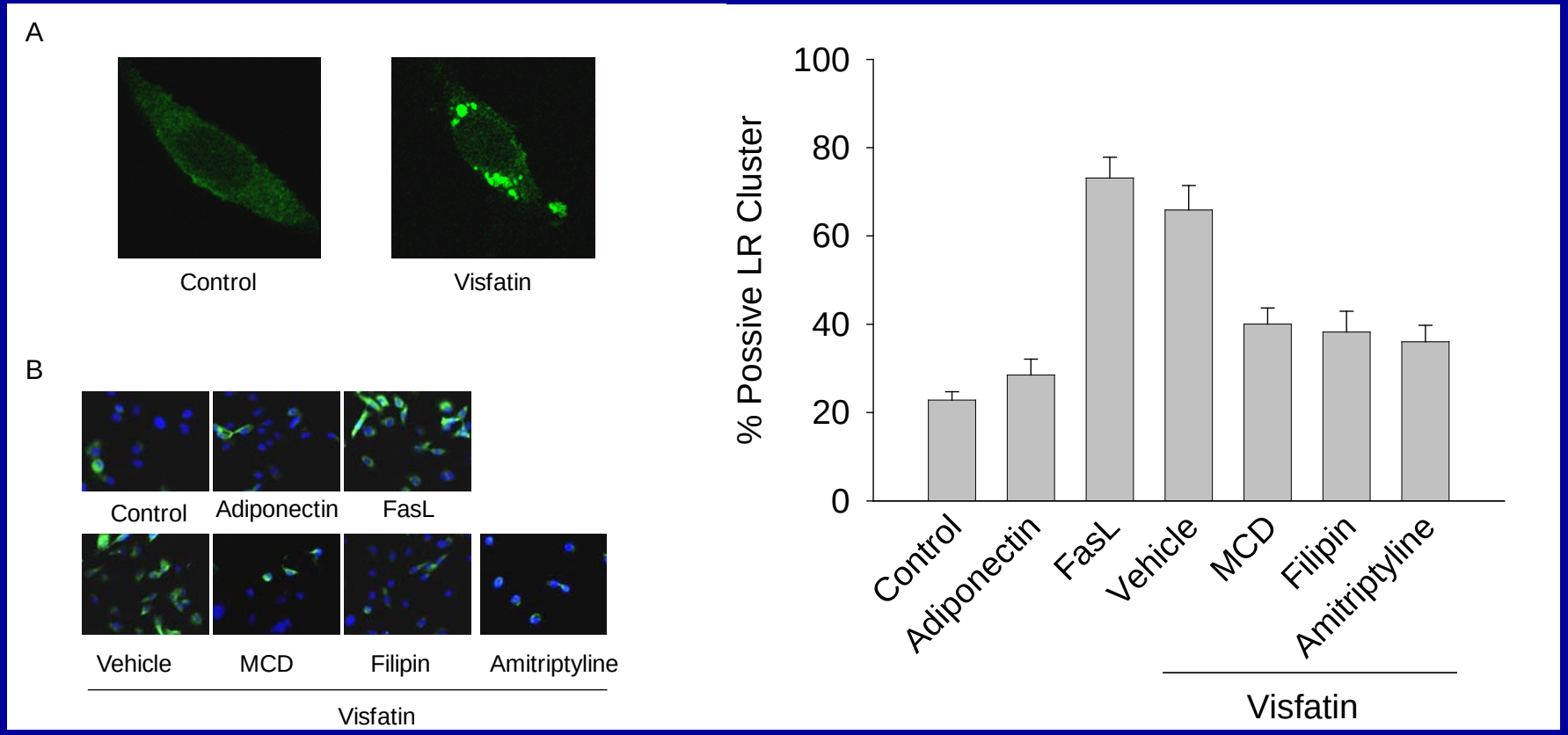
Effect of Visfatin on EDVD



Question 2

What is the mechanism by which Visfatin induced impairment of endothelium dependent vasodilation?

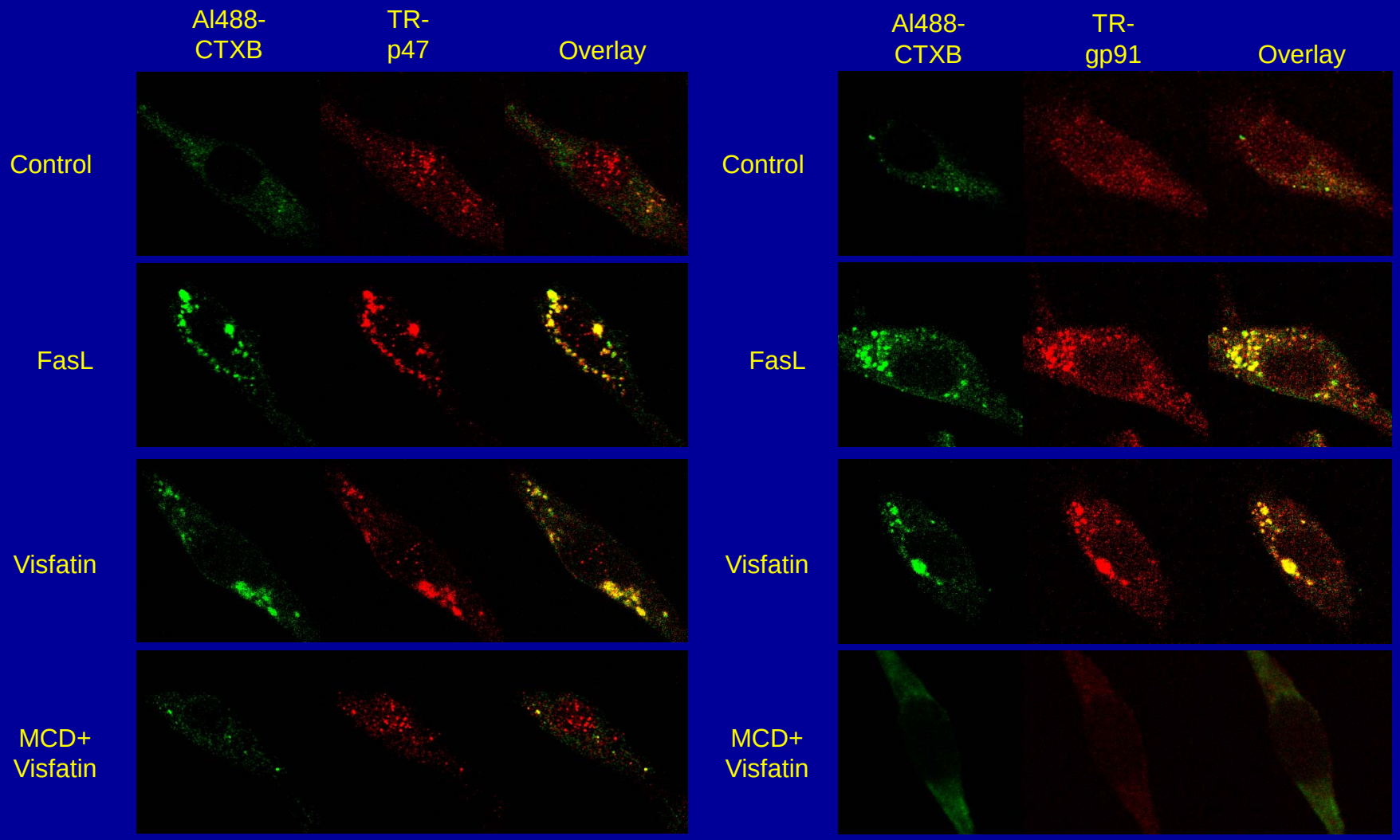
Visfatin Induced Lipid Raft Clustering



Question 3

Whether NADPH Oxidase is involved in the lipid raft aggregation?

Co-localization of NADPH Oxidase Subunits with Lipid Raft



Conclusion

- Visfatin can induce the impairment of EDVD.
- Visfatin can stimulate lipid raft aggregation which can be blocked by lipid raft blockers MCD and Filipin.
- ASM is involved in the Visfatin induced lipid raft formation which can be blocked by Amitryptiline.
- Visfatin can activate NADPH Oxidase and together result in colocalization with lipid raft.

Acknowledgements

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