



Anti-diabetic properties of *Fucus vesiculosus* and pine bark extracts using the adipocyte cell model 3T3-L1

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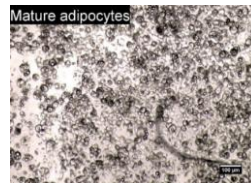
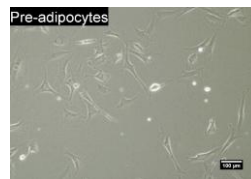


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Background

- Obesity is characterized by excess fat accumulation in adipocytes
- Major risk factor for secondary diseases like type 2 diabetes mellitus
- Progression of T2DM also linked with accumulation of free radicals
- Aim of this project to evaluate the effects of extracts on lipid accumulation in 3T3-L1 cells, inhibition against α -glucosidase and determine their antioxidant activity



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Methods

Antioxidant activity	Anti-diabetic activity	3T3-L1 cell model
<ul style="list-style-type: none"> • TPC • ORAC • DPPH • RP • MC 	<ul style="list-style-type: none"> • α-glucosidase inhibition 	<ul style="list-style-type: none"> • Viability assay • Proliferation assay • Oil Red O staining • AdipoRed staining

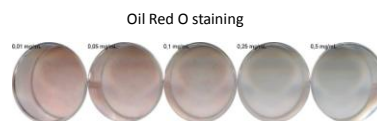
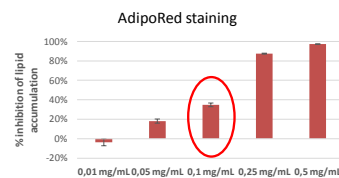


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Results

- Pine bark extract obtained the highest antioxidant activity and the most α -glucosidase inhibitory activity
- *F. vesiculosus* water extract obtained the highest inhibition of lipid accumulation in the 3T3-L1 cells without affecting their viability



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Conclusions

- *F. vesiculosus* extracts are effective inhibitors on lipid accumulation in 3T3-L1 cells
- Pine bark and *F. vesiculosus* extracts have potent antioxidant and α -glucosidase inhibitory activity
- Results could give rise to further research which could lead to development of a dietary enrichment compound



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