

MEETING ABSTRACT

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# Nanoparticles containing aqueous seed extract of *Syzygium cumini* (npasc) protect against oxidized LDL particles *in vitro*

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## Background

Diabetes mellitus (DM) is a heterogeneous group of metabolic disorders which affects over 10% of the world population. The diabetes-induced oxidized low-density lipoprotein (ox-LDL) can affect several components of the atherogenic process [1]. Nanodosage forms can provide advantages for herbal drugs, including increase of therapeutic index, improvement of stability and controlled delivery.

## Objectives

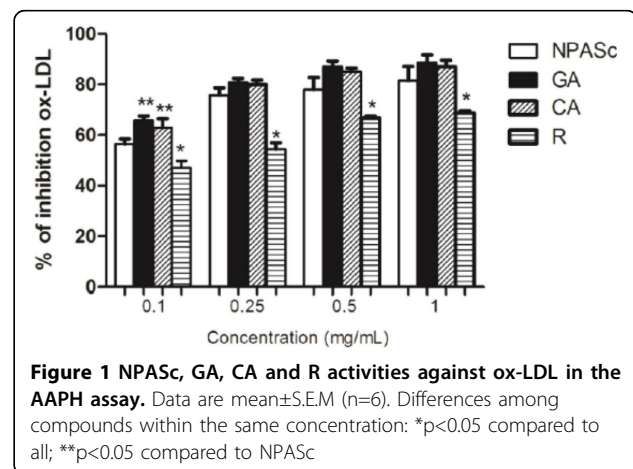
To evaluate the effect of NPASc and the major constituents of the extract (gallic acid, GA; chlorogenic acid, CA; rutin, R) on the levels of lipoperoxidation of ox-LDL particles by AAPH, *in vitro*.

## Materials and methods

LDL was isolated from human serum (n=6) [2]. LDL isolated samples were incubated with/without NPASc, GA, CA and R (0.1; 0.25; 0.5 and 1 mg/mL) at 37°C for 30 min. At the end of incubation, the samples were oxidized in the presence of 20 μM AAPH, for 4 h at 37°C. The oxidation was estimated by measuring the thiobarbituric acid reactive substances (TBARS, nmol MDA/mg of protein) [3]. N° of the Ethic Committee (0049.0.243.000-08).

## Results

Our results demonstrate that NPASc and the compounds protected LDL particles from the oxidation by AAPH, demonstrating that the known antioxidant activity of *S. cumini* was maintained. GA and CA showed a



**Figure 1 NPASc, GA, CA and R activities against ox-LDL in the AAPH assay.** Data are mean±S.E.M (n=6). Differences among compounds within the same concentration: \*p<0.05 compared to all; \*\*p<0.05 compared to NPASc

significant antioxidant activity, although less than that observed with NPASc; R had a lower effect when compared to other groups. This result confirms the possible antiatherogenic potential of the extract.

## Conclusion

NPASc could act to lower the ox-LDL presence in the circulation, reducing the number of proatherogenic potentials thus avoiding the formation of atherosclerotic lesions.

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## References

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