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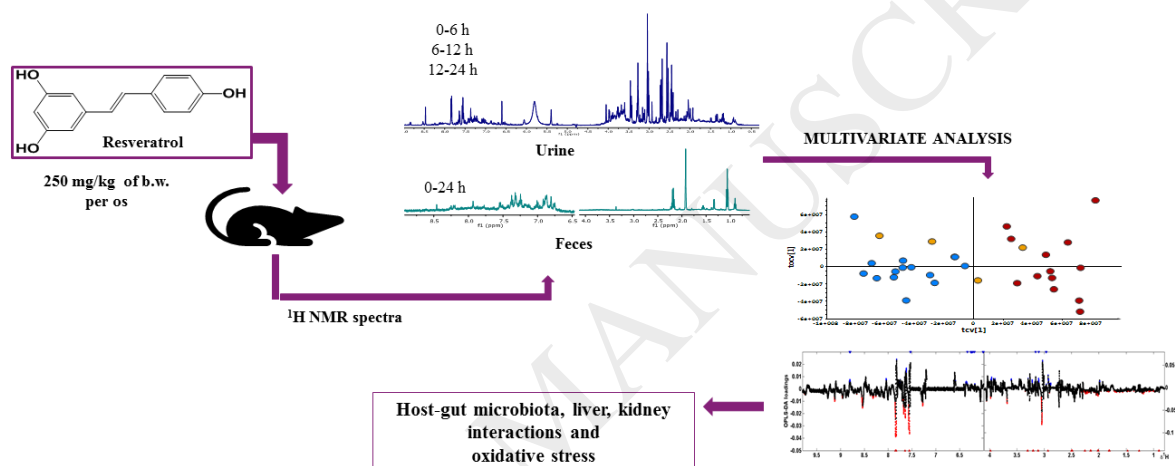
NMR-based metabonomic approach reveals changes in the urinary and fecal metabolome caused by resveratrol

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Graphical Abstract



Highlights

- Effects of pure resveratrol (RSV) on the urinary and fecal metabolome of normal female Wistar rats was studied by an NMR-based metabolomics approach.
- RSV causes significant variations of endogenous metabolites during the first 12 h after its administration.
- RSV modulates the composition and/or the function of the host gut microbiota.
- RSV may be involved in the control of energy homeostasis and downregulation of some biomarkers of oxidative stress.
- The effects of RSV are dose-dependent.

Abstract

An untargeted NMR-based metabonomics approach was used to evaluate the effects of pure resveratrol (RSV, 50 and 250 mg/kg *per os*) on the urinary and faecal metabolome of normal female Wistar rats. Multivariate data analysis on both the endogenous and xenobiotic metabolome of RSV provided an insight into its metabolic fate and influence on endogenous metabolites. The xenobiotic trajectory shows that RSV is highly metabolized within the first 12 h, the period of the most significant variation of endogenous metabolites. The results reveal alterations in gut microbiota co-metabolites, mainly at the high dose of RSV, such as hippurate, phenylacetyl glycine (PAG), p-cresyl

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