Supporting Material

Insight into bioactive compounds, antioxidant and anti-diabetic properties of rosehip (*Rosa canina* L.)-based tisanes with addition of hibiscus flowers (*Hibiscus sabdariffa* L.) and saffron (*Crocus sativus* L.)

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1. Experimental installation and procedure

The experimental installation used for the purpose of the experiment (Figure S1) was constructed to be able to precisely measure the mass change in time, and hold the set temperatures and air velocity. Fresh air is pushed by a fan through the electric heater. Heated air flows over the material, and the temperature of the air is regulated by a thermoregulator. A digital PID thermoregulator (REX C400, Japan) with an accuracy of ±0.1 °C is connected to the electric heater and is used to control and measure the air temperature. Hot air heats the material and absorbs moisture from the surface of the material. The installation also contains thermocouples (accuracy ±0.1 °C), that are placed in front of the material being dried, before the heated air reaches it. After the process is completed, the exhaust air is released into the atmosphere. The speed of the air flow was measured by a hotwire thermo-anemometer VT115S, with an accuracy of 0.01 m/s. The fresh rosehips were placed on the sheet metal plate. In intervals of 10 min, the heating plate was placed on the balance and measure the mass change in time. The balance used is a Kern precision balance, from Germany, with an accuracy of ±0.01 g.

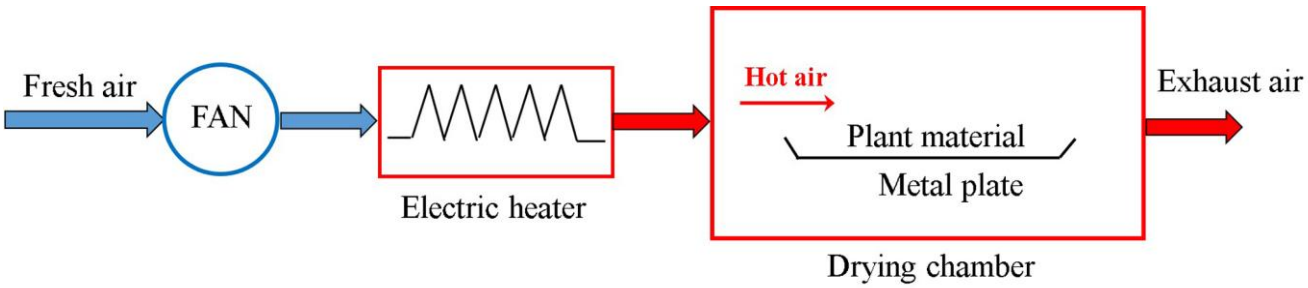

Figure S1. Schematic presentation of the experimental dryer.

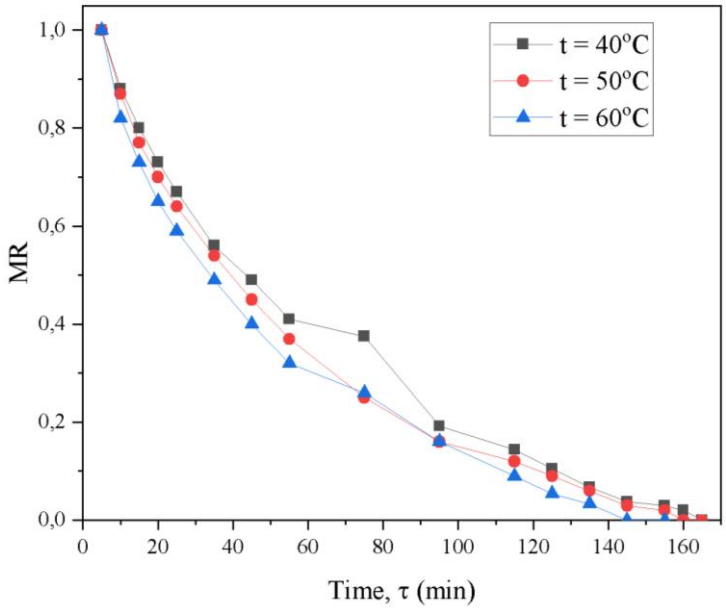

Figure S2. Dimensionless moisture ratio depending on the drying time for rosehip samples at an airflow velocity of 2 m/s and drying temperatures of 40, 50 and 60 °C.

Figure S3. Tisane samples.

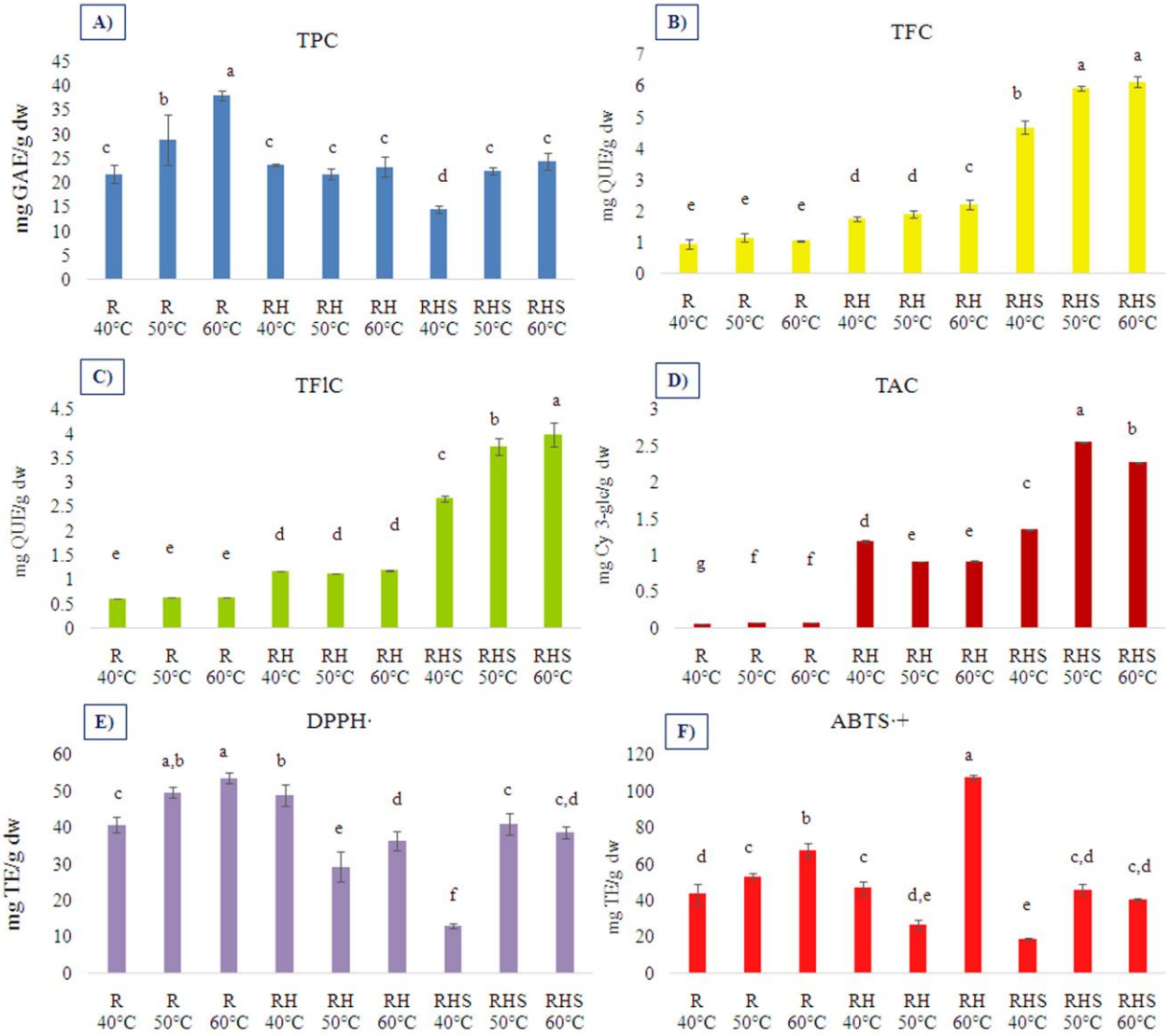

Figure S4. The content of polyphenols and antioxidant activity in rosehip-based tisanes: A) TPC—total phenolic content, B) TFC—total flavonoid content, C) TFlC—total flavonol content, and D) TAC—total anthocyanin content; E) DPPH· scavenging activity, and F) $ABTS^{+}$ scavenging activity; dry weight (dw) of plant parts; R—rosehip, R/H—rosehip/hibiscus mixture, R/H/S—rosehip/hibiscus/saffron mixture (40, 50, 60 °C—drying temperatures of rosehip).

GAE—gallic acid equivalents; QUE—quercetin equivalents; Cy 3-glc—cyanidin-3-glycoside equivalents; TE—Trolox equivalents; DPPH – 2,2–diphenyl–1–picrylhydrazyl; ABTS – 2,2′–azino–bis(3–ethylbenzothiazoline–6–sulphonic acid).

The values are the means ± SD (n ≥ 3); different letters (a-g) mean a significant difference at $p<0.05$.

In one-way ANOVA analysis with Fisher LSD test, in each additive dependent group of samples separately, all samples were compared mutually.