Effect of *Santolina chamaecyparissus* on physiological parameters: data from an animal model of mammary cancer

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Introduction

Breast cancer is the **most common** cancer worldwide. ***Santolina chamaecyparissus* L.** has successfully inhibited the proliferation of the MCF-7 cancer cell line. This study aims to **evaluate the chemopreventive effects** of ***S. chamaecyparissus* aqueous extract** (SCE) on female rats' **physiological parameters** with mammary cancer induced by N-methyl-N-nitrosourea (MNU).

Methodology

The institutional ethics committee (UTAD's ORBEA) **approved this study** (Fig. 1) (reference 834-e-CITAB-2020). SCE was supplemented in **drinking water** (120 µg/mL). At 50 days of age, **MNU** was **intraperitoneally** administered. Humane endpoints were evaluated weekly. After twenty-one weeks, animals were sacrificed by ketamine/xylazine overdose. SCE's chemical characterisation was performed by **LC-MS**, with nineteen phenolic compounds found, being the main molecules **myricetin-*O*-glucuronide** and **1,3-*O*-dicaffeoylquinic acid**.

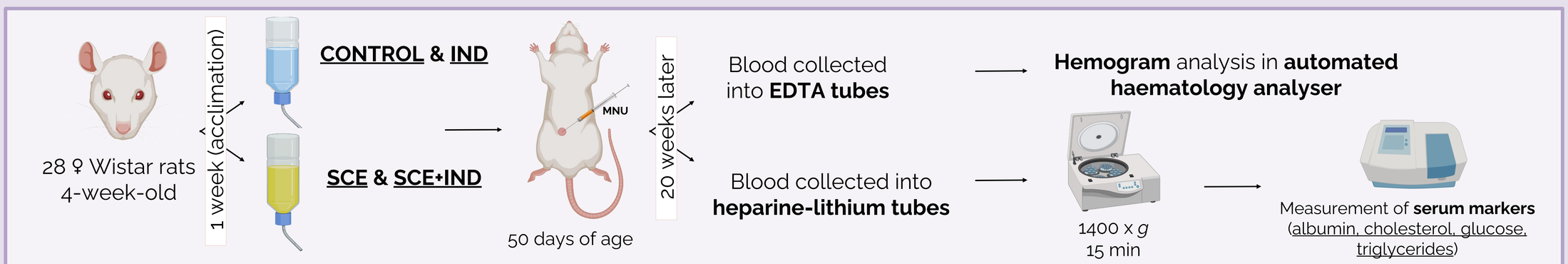

Fig. 1 | Schematic representation of the experimental protocol. **IND**: Induced with MNU; **SCE**: *Santolina chamaecyparissus* extract.

Results

Results from this study are **summarized** in **Figure 2 (A-D).** Significant differences were found for **haemoglobin**, **MPV** and **PDW** values.

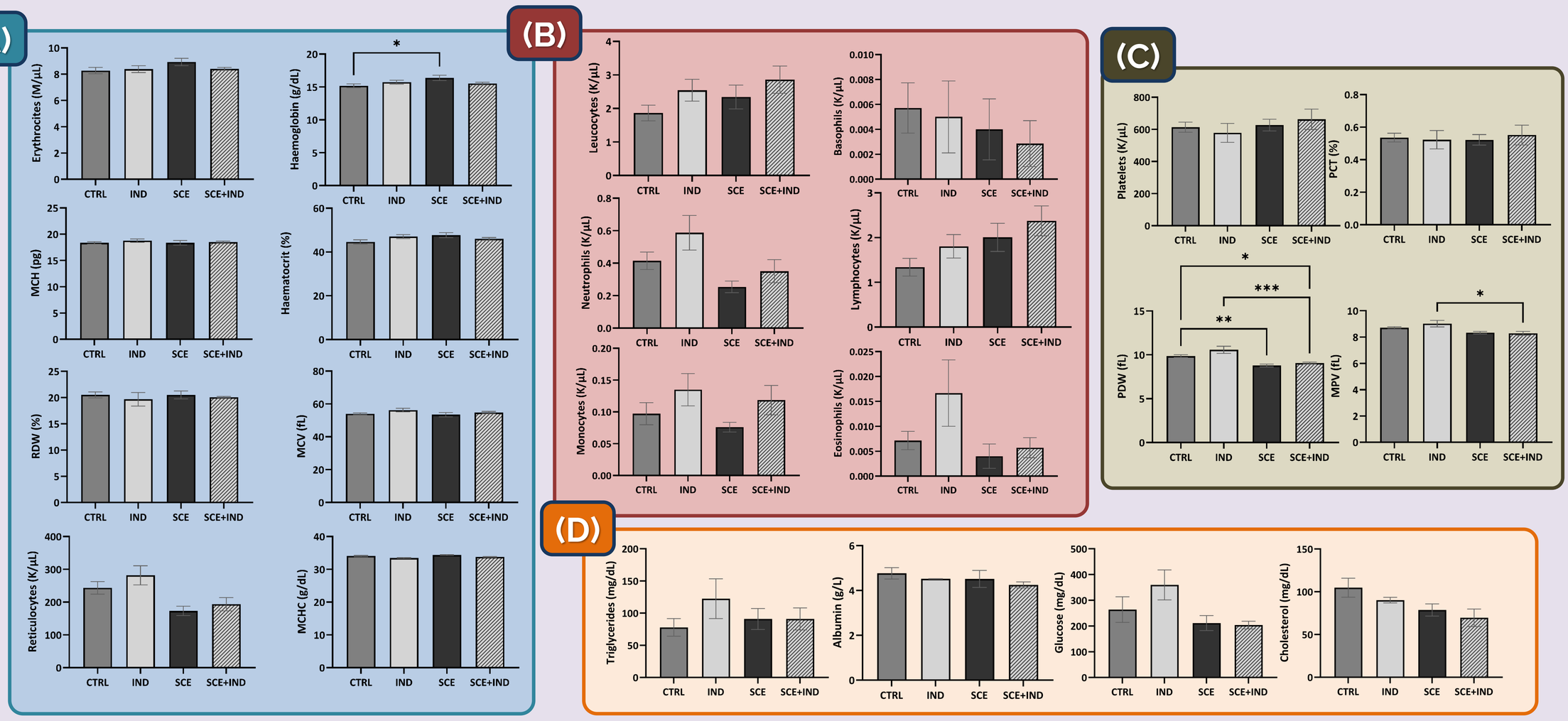

Fig. 2 | **Hemogram** and **biochemical parameters** analysed in this study. **(A)** Red blood cell parameters; **(B)** White blood cell parameters; **(C)** Platelet parameters; **(D)** Serum markers. * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$. **MCV**: Mean corpuscular volume; **MCH**: mean corpuscular haemoglobin; **MCHC**: mean corpuscular haemoglobin concentration; **MPV**: mean platelet volume; **PDW**: Platelet distribution width; **PCT**: Plateletcrit.

Conclusion

Platelet size appears to be **significantly affected by SCE**. SCE supplementation had **no effect on liver or kidney function** or well-being in animals, implying it could be a **viable treatment option for breast cancer**. Histological analysis will help confirm SCE's toxicological profile.

Acknowledgements: FCT through national funds FCT/MCTES (PIDDAC) to CIMO (UIDB/00690/2020 and UIDP/00690/2020) and SusTEC (LA/P/0007/2021); L. Barros thanks to the national funding by FCT through the institutional scientific employment program-contract for her contract.