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Abstract-Post-81 Other

Potential activity of withanolides in breast cancer treatment: a systematic review

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Background: Portuguese female population data from 2021 indicate that 31.6% of all tumours were breast cancer (BC), with 8,714 new cases reported [1]. Withanolides, a group of steroidal lactones found in plants such as *Withania somnifera*, *Physalis peruviana*, and *Tubocapsicum anomalum*, exhibit potential anticancer activity and are considered promising compounds for the treatment of BC [2]. **Objectives:** Discuss the effectiveness and the potential mechanisms of action of withanolides in the treatment of BC. **Methods:** Following PRISMA guidelines, a systematic review was conducted to evaluate *in vitro* and *in vivo* activity of natural/synthetic withanolides in BC, using original articles published in English (until December 2024) found in ScienceDirect® and Pubmed® databases and using the keywords “withanolides” and “breast cancer”. **Results:** A total of 34 studies were analysed (24 *in vitro*, three *in vivo*, seven combining both type of approaches), with withaferin A being the predominant compound. The effectiveness of withanolides was evaluated using different approaches, such as cell viability/cell proliferation assays and analysis of apoptosis. The doses of withanolides used in

studies and cancer cell lines (e.g., MCF-7, MDA-MB-231) ranged typically from 2 to 5 μM (*in vitro* studies) and from 4 to 8 mg/kg (*in vivo* studies). The mechanisms of action included cell cycle arrest (e.g., at the G2/M phase), modulation of oxidative stress, induction of apoptosis, inhibition of cell proliferation. **Conclusions:** Further studies are needed to confirm the results in clinical trials and to assess the potential of this group of steroidal lactones.

Keywords: *Withania somnifera*, withaferin A, breast cancer

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Abstract-Post-82 Other

Access to community pharmacies by rural populations in northeastern Portugal

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Background: Rural populations face challenges in accessing medicines and healthcare due to depopulation and geographic isolation. Community pharmacies play a vital role as the main point of care in these regions (1,2,3). **Objectives:** This study aims to explore the accessibility of community pharmacies in rural areas, understand the satisfaction and identify challenges. **Methods:** This is

an observational, descriptive and cross-sectional study, with a non-probability convenience sample of 168 people living in two villages in the municipality of Alfândega da Fé, Bragança District, in northeastern Portugal. An online and paper self-completion questionnaire built to respond to the objectives of the present study was used, with 3 parts: sociodemographic, pharmacies accessibility and satisfaction with accessibility. Statistical analysis was conducted using Microsoft Excel, including absolute and relative frequencies, as well as measures of central tendency and dispersion. **Results:** Most of the participants were female (52.2%; 91), with ages between 70 and 79 years (20.8%; 35), with secondary education as qualifications (45; 26.8%) and a monthly income between 500 and 1000 euros (108; 64.3%). 42.3% (71) of the participants had stopped going to the pharmacy because of the challenges they faced, such as distance, the time needed to get to the pharmacy and the lack of transport. In addition, the majority of participants (78%; 131) feel unsatisfied with the accessibility of community pharmacies. **Conclusions:** Rural population is unsatisfied with access to community pharmacies and faces several difficulties and accessibility challenges. Policies must be created to facilitate access to community pharmacies for rural regions.

Keywords: Pharmacies accessibility, rural populations, accessibility satisfaction.

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Abstract-Post-87 Other

*Quality control of an *origanum vulgare* l. oil cream for veterinary use: validation method*

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Background: The increasing interest in phytotherapeutic alternatives in veterinary medicine requires robust analytical methods to characterize bioactive compounds [1]. **Objectives:** Validate a high-performance liquid chromatography coupled with diode-array detector (HPLC-DAD/UV) method to use in quality control. Identify and quantify carvacrol and thymol molecules in a 2% (v/v) water-in-oil (W/O) cream formulation containing *Origanum vulgare* L. essential oil. **Methods:** The method used a reverse-phase C18 column and an isocratic mobile phase of methanol:acetonitrile:water (60:15:25), coupled with a diode-array detector and quantification by UV at 275 nm and room temperature. The method simultaneously quantifies carvacrol and thymol extracted from the cream. Calibration curves for both analytes were prepared with external standards, and linearity was confirmed within the range of 0–6 µg per 10 µL injection, with high correlation coefficients ($R^2 > 0.990$). Other validation parameters were performed as intra and inter-assay precision and accuracy. Selectivity and specificity were assessed through comparison with standard absorption spectra. **Results:** The method showed intra and inter assay precision below 5% RSD. LOD and LOQ of 0.14 and 0.43 µg (in 10µL injection) for thymol and 6.4 and 19.5 ng for carvacrol were found. Prior to HPLC-DAD/UV analysis, 100 mg of cream samples were extracted in triplicate with acetonitrile, with recoveries of 90 and 100% for the two formulations, when compared with the negative control [2]. **Conclusions:** This method validation confirms its reliability for quantifying key bioactive