



Formulations Containing Propolis of *Apis mellifera* with Antibacterial and Antitumoral Activity

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Received/Geliş Tarihi: 08/10/2018, Accepted/ Kabul Tarihi: 19/10/2018

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Abstract

Propolis, a resin produced by *A. mellifera* bees, presents several compounds of pharmaceutical interest and, further studies to demonstrate their pharmacological actions is sought. Capsules containing green propolis (BRPX) extracted in flax oil (**1** and **2**) polyethylene glycol (PEG) (**3** and **4**) were analyzed and analyzed according to IN 3¹. The following parameters were evaluated: total phenols and flavonoids, quantification of Artepillin-C (HPLC) confirmed by UHPLC-MS, antitumor activity in MCF-7 (breast code 0162) and B16F10 (melanoma code 0046) and antimicrobial activity (*E.coli*, *C. albicans* and *S. aureus*). The flavonoid content (%) of each capsule was **1**: 1.135 ± 0.009 , **2**: 0.521 ± 0.039 , **3**: 0.758 ± 0.020 , **4**: 1.232 ± 0.09 . The phenol content (%) of **1**: $2,509 \pm 0,024$, **2**: $2,280 \pm 0,075$, **3**: $1,039 \pm 0,029$, **4**: $3,426 \pm 0,074$. The content of Artepillin-C (mg / capsule) of **1**: 1.39 ± 0.12 , **2**: 1.07 ± 0.05 , **3**: 0.66 ± 0.01 , **4**: $0.39 \pm 0, 01$. The IC₅₀ (µg / mL) for MCF-7 was: **1**: 100.49 ± 6.41 , **2**: 463.65 ± 0.71 , **3**: 209.03 ± 35.99 , **4**: $238.84 \pm 4, 16$ and for B16F10, **1**: 277.53 ± 7.37 , **2**: 357.48 ± 10.15 , **3**: 376.15 ± 5.92 , **4**: 286.87 ± 10.79 . Inhibition halos ranged from 10 to 14 mm (*E.coli*), 8 to 10 mm (*C. albicans*) and 8 to 9 mm (*S.aureus*). This study demonstrates the importance of quality control for reliable formulations based on propolis.

References:

1. BRASIL (2001). MINISTRY OF AGRICULTURE. Normative Instruction nº 3 - ANNEX VII - Technical regulation for determination of identity and quality of propolis. Diário Oficial da República Federativa do Brasil.