Essential Oil Composition and Antioxidant and Antimicrobial Properties of Campomanesia pubescens O. Berg, Native of Brazilian Cerrado

Roberto CHANG 1*, Sérgio A.L. de MORAIS 1, Evandro A. do NASCIMENTO 1, Luís C.S. CUNHA 1, Edmilson de O. ROCHA 1, Francisco J.T. de AQUINO 1, Maria G. M. de SOUZA 2, Wilson R. CUNHA 2 & Carlos H. G. MARTINS 2

1 Instituto de Química, Universidade Federal de Uberlândia, Av. João Naves de Ávila, 2121, CEP: 38400-902, Uberlândia - MG, Brazil.

2 Núcleo de Pesquisas em Ciências Exatas e Tecnológicas, Universidade de Franca, Av. Dr. Armando Salles Oliveira, 201, CEP: 14404-600, Franca - SP, Brazil.

SUMMARY. In this study, the essential oil composition, total contents of phenolics and proanthocyanidins, antioxidant and antimicrobial activities from different plant parts (root, stem, leaf and fruit) of Campomanesia pubescens (DC) O. Berg from Brazilian Cerrado are reported. The root essential oil is distinguished from others by having only one representative of monoterpenes (alpha-terpenylacetate). The aerial parts of C. pubescens are rich in volatile terpenes, as expected, especially in fruits whose essential oil contained approximately 80% of monoterpenes. The essential oils showed antimicrobial activity against oral pathogens. The root essential oil showed the strongest inhibition against Fusobacterium nucleatum (ATCC 25586). The leaf extract presented the highest concentration of phenolic and proanthocyanidins compounds. The lowest concentration necessary for inhibition of DPPH to 50% ranged between 6.6 ± 1.6 and 56.6 ± 2.3 μg/mL. The leaf extract exhibited the highest inhibition, close to BHT.

KEY WORDS: Antimicrobial activity, Antioxidant activity, Essential oil, Oral pathogens, Phenolics, Proanthocyanidins.

* Author to whom correspondence should be addressed. E-mail: chang@iqufu.ufu.br