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Autores	Marcela N. Rosa, Larissa R. V. e Silva, Giovanna B. Longato , Adriane F. Evangelista, Izabela N. F. Gomes, Ana Laura V. Alves, Bruno G. de Oliveira , Fernanda E. Pinto, Wanderson Romão, Allisson R. de Rezende, Arali A. C. Araújo, Lohanna S. F. M. Oliveira, Alessandra A. de M. Souza, Stephanie C. Oliveira, Rosy Iara M. de A. Ribeiro, Viviane A. O. Silva and Rui M. Reis
Autor (es) USF	Giovanna B. Longato
Autores Internacionais	Rui M. Reis
Programa/Curso (s)	Programa de Pós-Graduação Stricto Sensu em Ciências da Saúde
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Resumo	Cervical cancer is the third most common in Brazilian women. The chemotherapy used for the treatment of this disease can cause many side effects; then, to overcome this problem, new treatment options are necessary. Natural compounds represent one of the most promising sources for the development of new drugs. In this study, 13 different species of 6 families from the Brazilian Cerrado vegetation biome were screened against human cervical cancer cell lines (CCC). Some of these species were also evaluated in one normal keratinocyte cell line (HaCaT). The effect of crude extracts on cell viability was evaluated by a colorimetric method (MTS assay). Extracts from *Annona crassiflora*, *Miconia albicans*, *Miconia chamissois*, *Stryphnodendron adstringens*, *Tapirira guianensis*, *Xylopia aromatica*, and *Achyrocline alata* showed half-maximal inhibitory concentration (IC_{50}) values < 30 µg/mL for at least one CCC. *A. crassiflora* and *S. adstringens* extracts were selective for CCC. Mass spectrometry (Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometer (ESI FT-ICR MS)) of *A. crassiflora* identified fatty acids and flavonols as secondary compounds. One of the *A. crassiflora* fractions, 7C24 (from chloroform partition), increased H2AX phosphorylation (suggesting DNA damage), PARP cleavage, and cell cycle arrest in CCC. Kaempferol-3-O-rhamnoside and oleic acid were bioactive molecules identified in 7C24 fraction. These findings emphasize the importance of investigating bioactive molecules from natural sources for developing new anti-cancer drugs.
Fomento	Finep