Quim. Nova, Vol. 48, No. 6, 2025

BRAZILIAN SCIENTIFIC CONTRIBUTIONS TO ANTIMYCOBACTERIAL NATURAL PRODUCTS: POTENTIAL OF INSPIRING NOVEL ANTI-TUBERCULOSIS AGENTS DEVELOPMENT

Marlon H. de Araujo[a], Natalie G. R. Ximenes[a], João V. R. Reis[a], Igor F. O. Ramos[a] and Michelle Frazão Muzitano[a,*]

[a]Laboratório de Produtos Bioativos, Instituto de Ciências Farmacêuticas, Universidade Federal do Rio de Janeiro, 27930-560 Macaé – RJ, Brasil

Received: 03/01/2025; accepted: 07/09/2025; published online: 08/05/2025

*e-mail: mfmuzitano@macae.ufrj.br

Supplementary Material

Table 1S. Extracts, fractions, and metabolites isolated from plant species that did not show prominent antimycobacterial activity

Specie	Natural product	Activity (MIC)	Reference
Achyrocline flaccida	flowers aqueous extract	1560 μg mL^{-1}	1
Buchenavia tetraphylla (Aubl.) R.A. Howard	hydroalcoholic extract from leaves and butanol-soluble fraction	0.39 mg mL^{-1}	2
Cinnamomum zeylanicum	essential oil (EO)	286.5 μg mL^{-1}	3
Cymbopogon citratus	essential oil	1250 μg mL^{-1}	3
Cymbopogon flexuosus	essential oil and nanoemulsion (5% of EO)	0.877 and 3.506 mg mL^{-1}	4
Equisetum hyemale	stem crude extract and its fractions	0.625 to 2.5 mg mL^{-1}	5
Hedyosmum brasiliense	leaves infusion, methanolic extract and rosmarinic acid	> 125 μg mL^{-1}	6
Lippia alba	essential oil	> 1250 μg mL^{-1}	3
Lippia sidoides	essential oil	299.5 μg mL^{-1}	3
Pachychalina sp.	3-(3,5-dibromo-4-methoxyphenyl)-2-methoxy-*N*-methylpropan-1-ammonium	820 mM	7
Paepalanthus latipes	96% ethanolic extract, 7-methylquercetagetin, 7-methyl quercetagetin-4'-*O*-β-D-glucopyranoside	> 500 μg mL^{-1}	8
Paepalanthus bromelioides	96% ethanolic extract, naphthopyranone fraction	> 500 μg mL^{-1}	8
Plectranthus amboinicus	essential oil	351.6 μg mL^{-1}	3
Pterodon emarginatus	essential oil	625 μg mL^{-1}	9
Talinum paniculatum	crude extract and fractions in hexane, ethyl acetate, butanol, and aqueous fraction	> 50 mg mL^{-1}	10

MIC: minimum inhibitory concentration.

REFERENCES

1. Abdelkader, M.; Elsharkawy, E. R.; El-Kersh, D. M.; El-Gendy, A. O.; El-Gendy, A. O.; *Nat. Prod. Res.* **2021**, *36*, 5864. [Crossref]

2. de Oliveira, Y. L. C.; da Silva, L. C. N.; da Silva, A. G.; Macedo, A. J.; Araújo, J. M. D.; Correia, M. T. D. S.; Silva, M. V. D. *Sci. World J.* **2012**, *1*, 849302. [Crossref]

3. Mota, A. P. P.; Dantas, J. C. P.; Frota, C. C.; *Cienc. Rural* **2018**, *48*, e20170697. [Crossref]

4. Rossi, G. G.; Guterres, K. B.; Bonez, P. C.; Gundel, S. S.; Aggertt, V. A.; Siqueira, F. S.; Ourique, A. F.; Wagnerd, R.; Klein, B.; Santos, R. C. V.; de Campos, M. M. A.; *Microb. Pathog.* **2017**, *113*, 335. [Crossref]

5. Alves, C. F. S.; Bonez, P. C.; de Souza, M. D. E.; da Cruz, R. C.; Boligon, A. A.; Piana, M.; Brum, T. F.; Rossi, G. G.; Jesus, R. S.; Grando, T. H.; Monteiro, S. G.; Campos, M. M. A.; Giongo, J. L.; Santos, R. C. V.; *Microb. Pathog.* **2016**, *101*, 119. [Crossref]

6. Amoah, S. K.; de Oliveira, F. L.; da Cruz, A. C. H.; de Souza, N. M.; Campos, F. R.; Barison, A.; Biavatti, M. W.; *Phytochemistry* **2013**, *87*, 126. [Crossref]
7. de Oliveira, M. F.; de Oliveira, J. H. H. L.; Galetti, F. C. S.; de Souza, A. O.; Silva, C. L.; Hajdu, E.; Peixinho, S.; Berlinck, R. G. S.; *Planta Med.* **2006**, *72*, 437. [Crossref]
8. Moreira, R. R. D.; Martins, G. Z.; Pietro, R. C. L. R.; Sato, D. N.; Pavan, F. R.; Leite, S. R. A.; Vilegas, W.; Leite, C. Q. F.; *Rev. Bras. Farmacogn.* **2013**, *23*, 278. [Crossref]
9. Oliveira, A. E.; Bezerra, D. C.; Duarte, J. L.; Cruz, R. A.; Souto, R. N.; Ferreira, R. M.; Nogueira, J.; da Conceição, E. C.; Leitão, S. G.; Bizzo, H. R.; Gama, P. E.; Carvalho, J. C. T.; Fernandes, C. P.; *Sustainable Chem. Pharm.* **2017**, *6*, 1. [Crossref]
10. Ramos, D. F.; Silva, L. F.; Pippi, B.; de Oliveira, L. F. S.; de Brum, T. F.; Macedo, A. J.; de Mello, J. R. B.; de Oliveira, J. F.; Fuentefria, A. M.; de Oliveira, L. F. S.; *Rev. Inst. Med. Trop. Sao Paulo* **2015**, *57*, 405. [Crossref]