

# Global Pharma Summit

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### Searching for flavonoids with tyrosinase inhibitory activity from extracts of *Dalea pazensis*

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Tyrosinase enzyme (Tyr) participates in the biosynthesis of melanin, responsible for the color formation in the skin of mammals, catalyzing two reactions: L-Tyrosine's hydroxylation (monophenolase activity) and L-Dopa's oxidation (diphenolase activity). Tyr inhibitory compounds are important in the treatment with abnormal pigmentation diseases and as whitening agents in cosmetics, but they showed toxicity, so research for new inhibitors of Tyr becomes primary. Chemical and pharmacological studies of argentinian species from the *Dalea* genus have been performed by our group informing new flavonoids with important activity as Tyr inhibitors. The promising results motivate us to study other species in the genus. Previously, we inform that different extracts of *Dalea pazensis*, Bolivian specie, showed significant inhibition of monophenolase activity. In the present study, the inhibitory activity of diphenolase by its extracts is presented. Also, the isolation, identification and diphenolase inhibitory activity of 5,7,2',4'-tetrahydroxy-5'-(1'',1''-dimethylallyl)-8-prenylflavanone (8PP), isolated from the benzene extract and informed in other species of the genus, are reported. The results show a benzene extract as the most active ( $82.6 \pm 1.0$  %) at  $1\mu\text{g/mL}$ . 8PP showed an  $\text{IC}_{50}$  ( $80.7 \pm 0.4$  mM), compared with reference inhibitor Kojic Acid ( $\text{IC}_{50} = 129.6 \pm 0.3$  mM), showing two times more active than this. Previously, 8PP had shown a significant inhibition on monophenolase activity. Thus, 8PP could be a new candidate with potential applications in the pharmaceutical and cosmetic industries, motivating us to search other components that could contribute to the significant activity observed for the benzene extract as Tyr inhibitors.

#### Biography

María Daniela Santi finished at 21 years old her Pharmacy career in School of Chemistry, National University of Cordoba, Argentina with Honors. At this moment, she is in the fourth year of her Chemistry PhD working on the searching for natural compounds with activity on melanogenesis, specifically on tyrosinase obtained from mushroom and from human and mouse melanoma cells lines (HBL and B16, respectively). With more than 12 publications in conferences and a paper in Phytochemistry letters, the results obtained thereby, prove to be innovative and promising in terms of activity studied.

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