

## PEROXIDASES FROM NEEDLES OF ARAUCARIA ANGUSTIFOLIA

Lydia Fumiko Yamauchi, Massuo Jorge Kato

Departamento de Química Fundamental, Instituto de Química, Universidade de São Paulo, São Paulo, Brasil, [majokato@iq.usp.br](mailto:majokato@iq.usp.br)

The *Araucaria angustifolia* is an endemic coniferae of southern and southeastern Brazil. It composes the “Mata de Araucárias” an important bioma endangered due the extensive loggings. Their leaves contain six major amentoflavone-type biflavonoids, including amentoflavone, ginkgetin and tetra-*O*-methylamentoflavone as determined by HPLC-ESI analyses. These compounds are reported to possess a variety of biological activities especially as antioxidants, which, is related to their capacity to suppress singlet oxygen, lipoperoxidation, and DNA oxidation promoted by several oxidant agents. An additional mode of action is related to the ability to quench transition metals involved in free radical formation.

The biosynthesis of biflavonoids has not been investigated yet, but it has been proposed to take place by oxidative coupling of two chalcones or flavonoids units. The predominance of amentoflavone-type biflavonoid in *Araucaria angustifolia* indicates the specificity of peroxidase involved in its formation. The peroxidase activity was detected in the enzymatic extract from needles of *Araucaria angustifolia*. The enzyme convert two molecules of apigenin to amentoflavone and ginkgetin. The products were identified by its UV-spectrum, LC/mass spectrometry analysis and comparison with reference compound.

Financial Support: FAPESP and CNPq