



Trans-resveratrol concentrations and antimutagenic potential of juice from the grape cultivars Vênus, BRS Violeta and Isabel

N.C.V. Polonio¹, C.L.M.S.C. Rocha¹ and E. Clemente²

¹Departamento de Biotecnologia, Genética e Biologia Celular,
²Departamento de Química, Universidade Estadual de Maringá,
Maringá, PR, Brasil

Corresponding author: E. Clemente
E-mail: eclemente@uem.br

Genet. Mol. Res. 13 (1): 1152-1159 (2014)
Received August 16, 2013
Accepted December 2, 2013
Published February 25, 2014
DOI <http://dx.doi.org/10.4238/2014.February.25.1>

ABSTRACT. Grape juice, in addition to being an energetic food, due to its high sugar content, has several compounds that can prevent or treat various types of diseases. Resveratrol is a compound present in grapes that has attracted a lot of interest; in addition to preventing cardiovascular disease linked to lipid metabolism, it has chemopreventive and chemotherapeutic activities. We evaluated the antimutagenic activity and determined the trans-resveratrol content in grape juice from the varieties Vênus, BRS Violeta and Isabel. The grape juices from the three cultivars and the resveratrol solution were tested in the *methG1* system in *Aspergillus nidulans*. The conidia from the *biA1methG1* strain were treated for 4 h in 10% grape juice (v/v). After washing, the conidia were placed in selective media to analyze survival and mutations. The standard resveratrol solution and the grape juice of the cultivar Isabel, both with a trans-resveratrol content of 1 mg/mL, presented antimutagenic potential in this test system because the frequency of mutation of the treatments was significantly lower than the frequency of spontaneous mutation. However, grape juice from

the varieties Vênus and BRS Violeta, both with a lower quantity of trans-resveratrol, gave weak antimutagenic activity in this test system because the frequency of mutation of the treatments was significantly higher than the frequency of spontaneous mutation.

Key words: Phenolic; Red grape varieties; Methionine system (*methG1*); Mutagenicity; HPLC