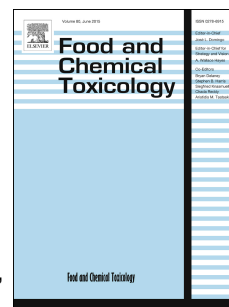


# Accepted Manuscript

Protection of cyanidin-3-O-glucoside against acrylamide- and glycidamide-induced reproductive toxicity in leydig cells

Jianxia Sun, Mingwei Li, Feiyan Zou, Shun Bai, Xinwei Jiang, Lingmin Tian, Shiyi Ou, Rui Jiao, Weibin Bai



PII: S0278-6915(18)30176-5

DOI: [10.1016/j.fct.2018.03.027](https://doi.org/10.1016/j.fct.2018.03.027)

Reference: FCT 9663

To appear in: *Food and Chemical Toxicology*

Received Date: 18 October 2017

Revised Date: 17 March 2018

Accepted Date: 20 March 2018

Please cite this article as: Sun, J., Li, M., Zou, F., Bai, S., Jiang, X., Tian, L., Ou, S., Jiao, R., Bai, W., Protection of cyanidin-3-O-glucoside against acrylamide- and glycidamide-induced reproductive toxicity in leydig cells, *Food and Chemical Toxicology* (2018), doi: 10.1016/j.fct.2018.03.027.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Protection of Cyanidin-3-*O*-Glucoside against Acrylamide- and Glycidamide-Induced Reproductive Toxicity in Leydig Cells

Jianxia Sun<sup>a, 1</sup>, Mingwei Li<sup>b, 1</sup>, Feiyan Zou<sup>b, 1</sup>, Shun Bai<sup>b</sup>, Xinwei Jiang<sup>b</sup>, Lingmin Tian<sup>b</sup>,  
Shiyi Ou<sup>b</sup>, Rui Jiao<sup>b,\*</sup>, Weibin Bai<sup>b,\*</sup>

<sup>a</sup> Faculty of Chemical Engineering and Light Industry, Guangdong University of Technology,  
Guangzhou, 510006, China

<sup>b</sup> Department of Food Science and Engineering, Institute of Food Safety and Nutrition, Guangdong  
Engineering Technology Center of Food Safety Molecular Rapid Detection, Jinan University,  
Guangzhou, 510632, P.R.China

## Abstract

Acrylamide (AA) occurs in many cooked carbohydrate-rich foods and has caused widespread concern as a possible carcinogen. Glycidamide (GA) is the ultimate genotoxic metabolite of AA. The present study was to investigate the protective effect of Cyanidin-3-*O*-glucoside (C3G) against AA- and GA-induced reproductive toxicity in R2C Leydig cells. The results demonstrated that C3G inhibited AA- and GA-induced cytotoxicity and mitochondria-mediated cell apoptosis, the effective doses of C3G were ranging from 10-50  $\mu$ M. Besides, AA (1.925 mM) and GA (0.872 mM) exposure increased ROS level and decreased mitochondrial membrane potential, which led to a decrease in progesterone production, while C3G ranging from 10-50  $\mu$ M reduced ROS immediately, and increased progesterone production after 24 h treatment. Furthermore, C3G up-regulated expression of Bcl-2 protein and

Download English Version:

<https://daneshyari.com/en/article/8546812>

Download Persian Version:

<https://daneshyari.com/article/8546812>

[Daneshyari.com](https://daneshyari.com)