

Phenolic Compounds in Animal Nutrition and Health: Chronic Kidney Disease

F. Baptista, J. Paié-Ribeiro, M. Almeida, A. N. Barros

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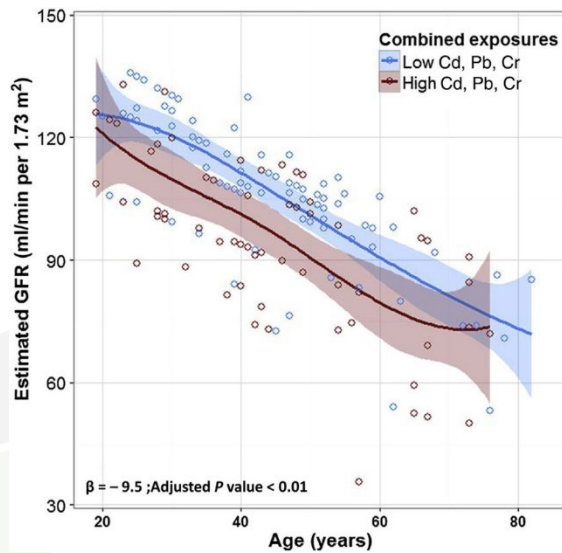
Chronic Kidney Disease



Chronic Kidney Disease

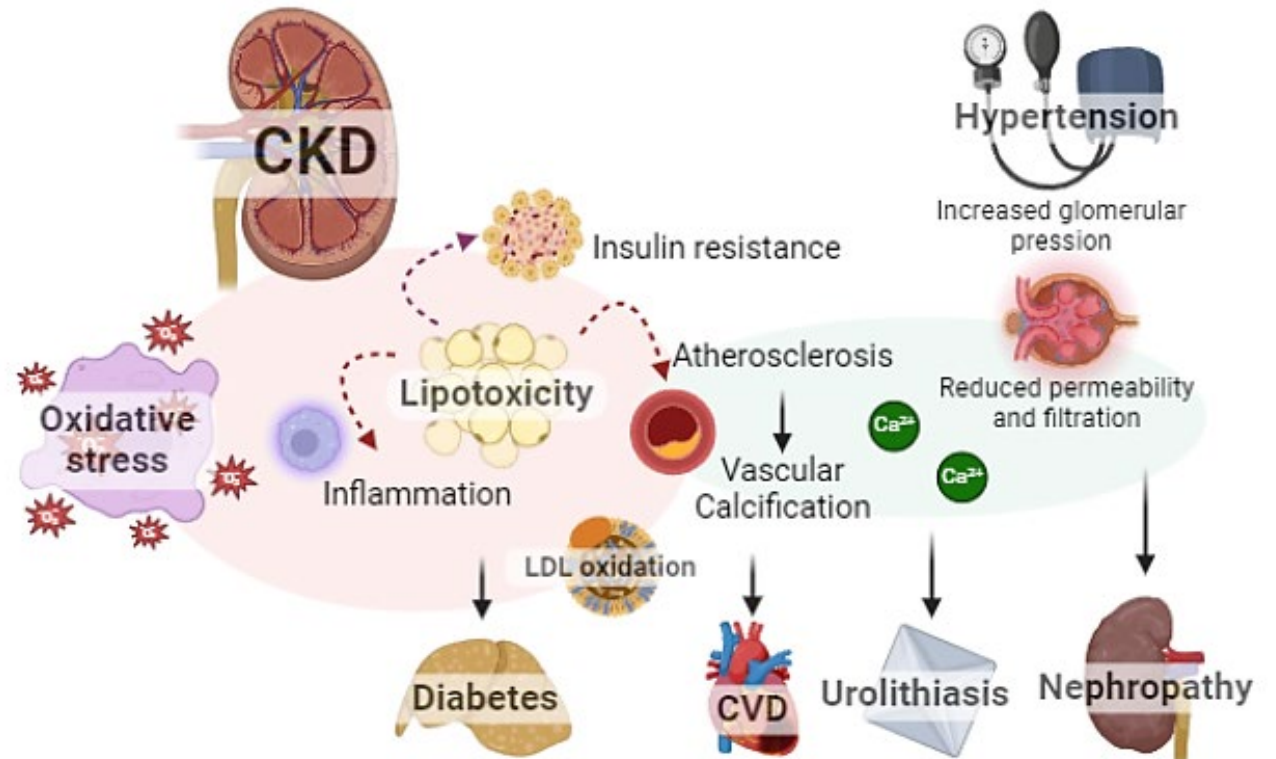
Biomarkers:

- Glomerular Filtration Rate (GFR) ↓
- Serum Creatinine
- Blood Urea Nitrogen (BUN)
- Proteinuria



Tsai et al., 2017

Related diseases:

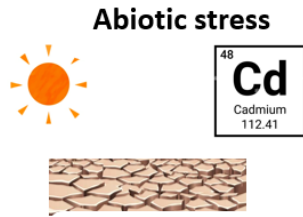




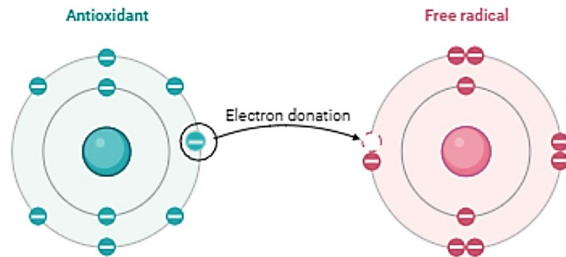
Phenolic Compounds



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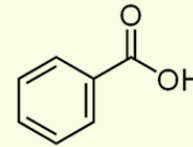
Biotic stress



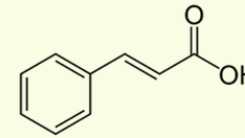
Phenolic compounds

Non flavonoids

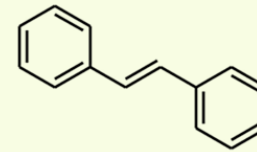
Phenolic acids



Benzoic acids



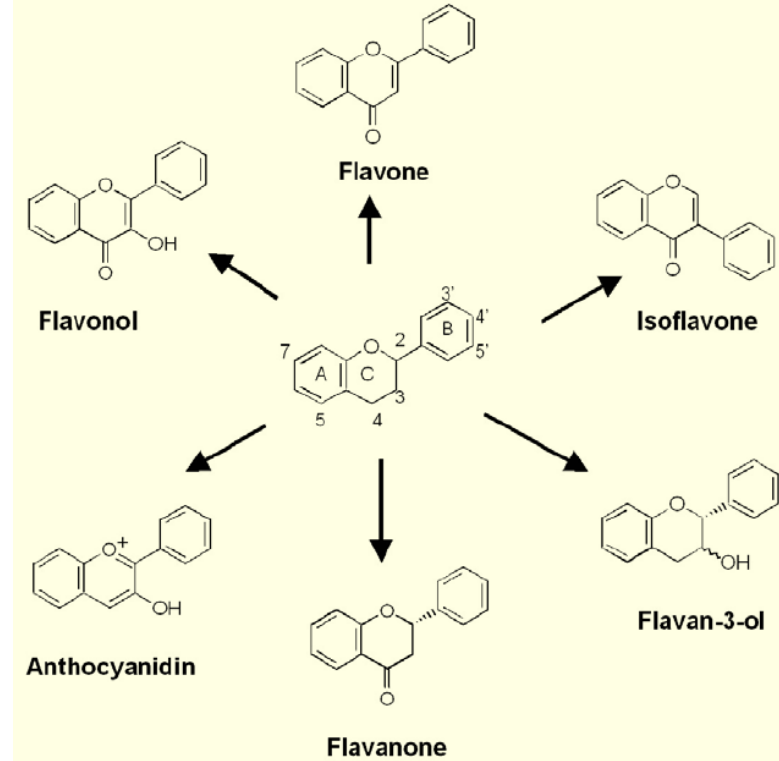
Cinnamic acids



Stilbenes

Rahman *et al.*, 2021

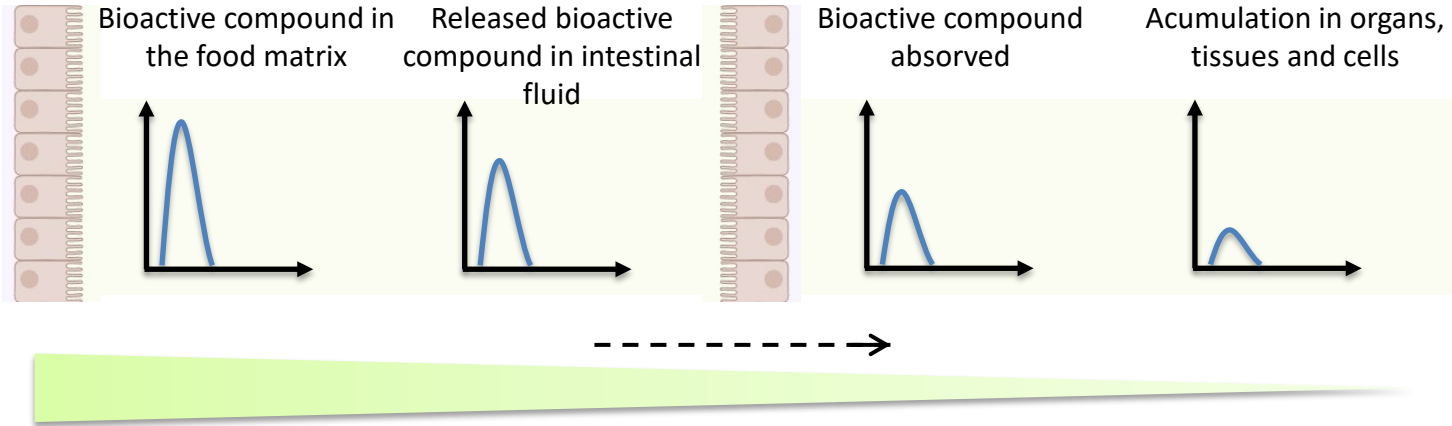
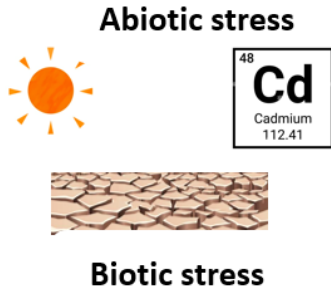
Flavonoids



Nishiumi *et al.*, 2011



Phenolic Compounds



DECREASING CONCENTRATION OF BIOACTIVE COMPOUNDS

BIOACCESSIBILITY

Maximal amount of bioactive compounds that release into gastrointestinal fluids

In vitro studies

BIOAVAILABILITY

Fraction of bioactive compounds absorbed and spread upon systemic circulation

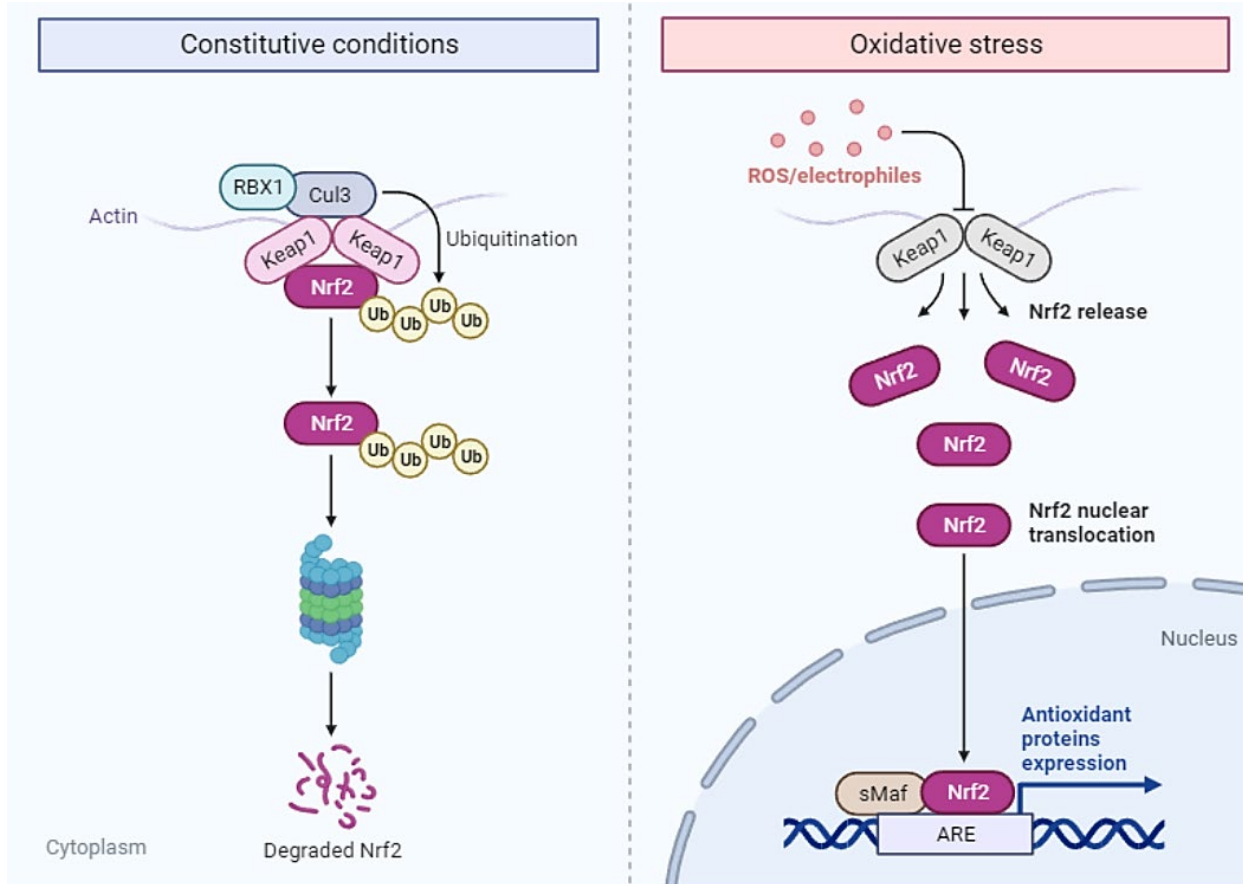
In vitro and *in vivo* studies



Phenolic Compounds: CKD



Phenolic Compounds: CKD



Veterinary Immunology and Immunopathology 173 (2016) 50–59



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Effects of polyphenols including curcuminoids, resveratrol, quercetin, pterostilbene, and hydroxypterostilbene on lymphocyte pro-inflammatory cytokine production of senior horses *in vitro*

Melissa H. Siard, Kellie E. McMurry, Amanda A. Adams*

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Research Article

Antioxidant Potential of the Polyherbal Formulation “ImmuPlus”: A Nutritional Supplement for Horses

Stefano Cecchini,¹ Mariateresa Paciolla,¹ Anna Rocchina Caputo,² and Alfonso Bavoso¹

¹ Dipartimento di Scienze, Università degli Studi della Basilicata, Viale dell'Ateneo Lucano 10, 85100 Potenza, Italy

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EQUINE VETERINARY JOURNAL

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Oxidative stress and antioxidant status in intensely exercising horses administered nutraceutical extracts

D. N. SMARSH, N. LIBURT, J. STRELTSOVA, K. MCKEEVER and C. A. WILLIAMS*

Department of Animal Science, Equine Science Center, Rutgers, the State University, New Jersey USA.

Keywords: horse; antioxidants; black tea; exercise; nutraceutical; orange peel



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↓ Inflammation due to NSAIDs

Polyphenols particularly modulate inflammation via NF- κ B and MAPK signaling



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Good source of antioxidants in horses



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↓ oxidative stress

Thank you!

Review

Exploring the Role of Phenolic Compounds in Chronic Kidney Disease: A Systematic Review

Filipa Baptista ^{1,*} , Jessica Paié-Ribeiro ² , Mariana Almeida ²  and Ana Novo Barros ^{1,*} 

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FCT - Portuguese Foundation for Science and Technology
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Thank you!

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