

Laboratory Chemistry of Lipids

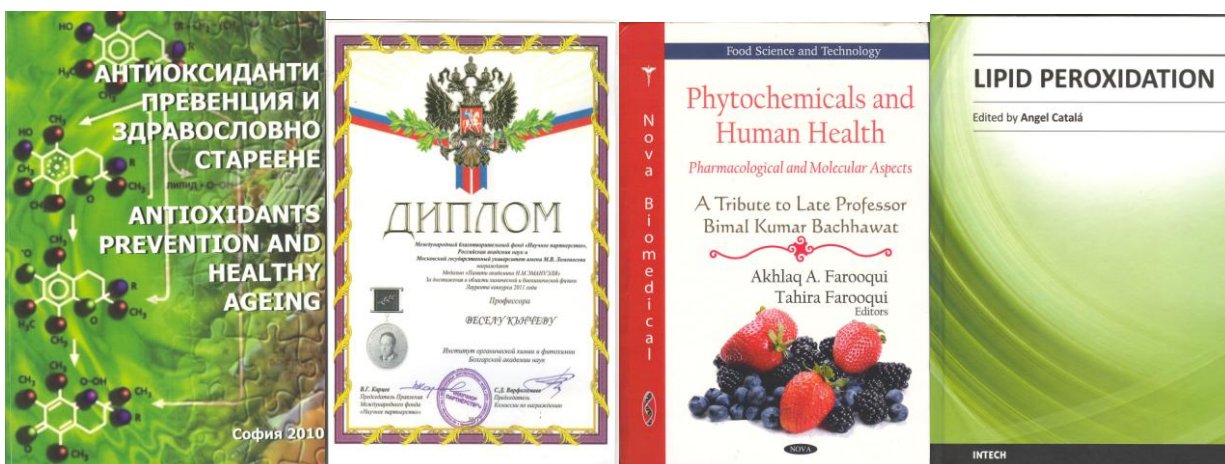
Group of Lipid Oxidation Stability and
Structure - Antioxidant Activity Relationship
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Lipid peroxidation monography, open access

<http://www.intechopen.com/articles/show/title/lipid-oxidation-in-homogeneous-and-micro-heterogeneous-media-in-presence-of-prooxidants-antioxidants>

- 1952, 28 February – Born in Karnobat, Bulgaria
- 1971 – Chemist-technologist, Technical School of Chemistry "Prof.As.Zlatarov", Sofia.
- 1976 - M.Sc.Eng.Chem., Chemistry of Organic Synthesis, University of Chemical Technological and Metallurgy, <http://www.uctm.edu/> Sofia, Bulgaria
- 1982-1986, Research Chemist, [Laboratory Chemistry of Lipids](#), [Institute of Organic Chemistry with Centre of Phytochemistry](#), [Bulgarian Academy of Sciences](#)
- 1986-1998, Research Fellow, [Laboratory Chemistry of Lipids](#), IOCCP-BAS.
- 1997- Doctoral Degree (PhD) IOCCP-BAS; Ph.D Thesis: "Kinetics and Mechanism of Lipid Oxidation in Presence of Fatty Alcohols and Mono- and Diacylglycerols".
- 1998-2005 - Senior Research Associate, IOCCP-BAS,
- 2005 - Associate Professor, IOCCP-BAS,

- 2007 - Leader of the Group of Lipid Oxidation Stability and Structure-Antioxidant Activity Relationship, IOCCP-BAS

Research Interests:

- ✚ Determination of oxidative stability of lipids, fats, oils and all lipid containing products.
- ✚ Study the kinetics and mechanism of lipid oxidation in absence and in presence of pro-oxidants, anti-oxidants and surfactants.
- ✚ Combination of kinetical, spectral and theoretical methods (quantum-chemical calculations and QSAR) to study the structure-activity relationships of various antioxidants.
- ✚ Application of kinetic and structural modeling and computer simulation to study the lipid oxidation processes and the reactivity of phenoxy radicals formed in homogeneous and micellar media.

Joint international projects with:

- ✓ **Russia:** Semenov Institute of Chemical Physics, Russian Academy of Sciences, <http://www.chph.ras.ru/>, Moscow, 1988-1990, 1996–2008, 2009–2014 and N.N.Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, <http://ibcp.chph.ras.ru/> 2009-2014.
- ✓ **Germany:** GSF-National Research Center for Environment and Health, Institute of Radiation Biology, http://www.hi-europe.info/files/1998_9/gsf.htm Neuherberg, 2000-2001;
- ✓ **Greece:** Aristotle University of Thessaloniki, School of Chemistry, Laboratory of Food Chemistry and Technology, http://www.auth.gr/home/index_en.html Thessaloniki, 2003 - 2004;
- ✓ **Spain:** University of Santiago de Compostela, Molecular Informatics, X-Ray Unit, RIAIDT-Structural Studies Area, <http://www.usc.es/en/index.jsp> Edificio CACTUS, Santiago de Compostela, 2004-2007.
- ✓ **India:** Central Food Technological Research Institute (CFTRI), Traditional Food Department, Mysore, <http://www.cftri.com/aboutus/index.html>, 2006 – 2009.
- ✓ **Italy:** CNR Institute of Bio-molecular Chemistry, Sassari, <http://www.icmib.na.cnr.it/home/> 2010-2012; and Sapienza University of Rome, <http://www.uniroma1.it/>
- ✓ **Poland:** Institute of Animal Reproduction and Food Research, Polish Academy of Sciences, Olszdczyn, <http://www.pan.olsztyn.pl/en/> 2012-2014.

Membership in Scientific Organizations

- Member of the Union of the Chemists in Bulgaria since 1982;
- Member of the Union of the Scientists in Bulgaria since 1999;
- Member of German Society for Fat Research (Deutsche Gesellschaft fuer Fettwissenschaft e.V., DGF) since 2002; <http://www.dgfett.de/>
- Member of the European Federation for Lipid Science and Technology (EuroFedLipid) since 2002- <http://www.eurofedlipid.org/index.htm>
- Expert of European Food Safety Authority (EFSA) <http://www.efsa.europa.eu/> since 2010-
- Member of Free Radical Research Society in Europe – since 2012
- Member of Editorial Board of Polish Food Journal – since 2012
- Responsible for ERASUM programme in IOCCP-BAS since 2011
- Lector in Centre of BAS for PhD student – since 2011.
- Lector in Medicinal University-Sofia, Post-graduated course of Department of Human health- since 2009

Selected publications: (former family name Kortenska)

1. **V.D.Kancheva**, *Phenolic Antioxidants of Natural Origin – Structure Activity Relationship and their Beneficial Effect on Human Health*. In: “*Phytochemicals and Human Health: Pharmacological and Molecular Aspects*”, Nova Science Publishers Inc., USA, Ed. A.A.Farooqui, 2012, Chapter I, 1-45

(ISBN: 978-1-61761-196-4).

2. **V.D.Kancheva**, O.T.Kasaikina, *Lipid Oxidation in Homogeneous and Micro-heterogeneous Media in Presence of Prooxidants, Antioxidants and Surfactants*. In: *Lipid Peroxidation*, ed. A. Catala, In Tech Open Access Publ. 2012 (ISBN: 980-953-307-143-0).

3. **V.Kancheva**, *Oxidative Stress and Lipid Oxidation*. In: “*Antioxidants - Prevention and Healthy Aging*”, Ed. by F.Ribarova, SIMELPRESS Publ., Sofia, Bulgaria, 2010, Chapter 3, 233-238 (ISBN-978-954-9487-89-3).

4. **V.Kancheva**, *Antioxidants. Structure - Activity Relationship*. In: “*Antioxidants - Prevention and Healthy Aging*”, Ed. by F. Ribarova, SIMELPRESS Publ., Sofia, Bulgaria, 2010, Chapter 1, 56-72 (ISBN-978-954-9487-89-3).

5. **V.D.Kortenska-Kancheva**, V.S.Bankova; *A Review of the Antioxidant Activity of Propolis from Different Areas*; *Recent Progress in Medicinal Plants*, J.N.Govil, V.K.Singh, K.Ahmad, eds. Studium Press, LLC, Texas, USA, Volume **14**, 2006, Chapter 6, 81-98.

6. V.G.Kondratovich, **V.D.Kortenska**, Z.S.Kartasheva, N.V.Yanishlieva, I.R.Totzeva, M.I.Boneva, O.T.Kasaikina; *Kinetics of Lipid Oxidation and Lipid Hydroperoxide Decomposition in the Presence of Amphiphilic Compounds*, in: *Peroxides at the Beginning of the Third Millennium: Synthesis, Properties, Application*, Eds. V.A.Antonovsky, O.T.Kasaikina, G.E.Zaikov, Nova Science Publ., New York, 2004, Chapter **14**, 261-267.

7. **V.D.Kancheva**, L.Saso, S.Angelova, M.C.Foti, A.Slavova-Kasakova, C.Draquino, V.Enchev, O.Firuzi, J.Nechev; *Antiradical and Antioxidant Activities of Some New Bio-antioxidants*; *BIOCHIMIE*, **94**, 2011, 403-415.

8. **V.D.Kancheva**, P.V.Boranova, J.T.Nechev, I.I.Manolov; *Structure-Activity Relationships of New 4-Hydroxy – Bis-Coumarins as Radical Scavengers and Chain-Breaking Antioxidants*; *BIOCHIMIE*, **92** (9), 2010, 1138-1146.

9. **V.D.Kancheva**, L.Saso, P.V.Boranova, M.K.Pandey, Sh.Malhorta, J.T.Nechev, A.K.Prasad, M.B.Georgieva, A.L.DePass, V.S.Parmar, *Structure-Activity Relationship of Some Dihydroxy Coumarins. Correlation between Experimental and Theoretical Data and Synergistic Effect*. *BIOCHIMIE*, **92** (9) 2010, 1089-1100

10. R.F.Vasilev, **V.D.Kancheva**, G.F.Fedorova, D.I.Batovska, A.V.Trofimov; *Antioxidant Activity of Chalcones. The Chemiluminescence Determination of the Reactivity and Quantum – Chemical Calculation of the Energies and Structures of Reagents and Intermediates*. *Kinetics and Catalysis*, **51** (4), 2010, 507-515

11. O.T.Kasaikina, Z.S.Kartasheva, **V.D.Kancheva**, N.V.Yanishlieva, I.R.Totseva; *Consumption of Quercetin and Rutin in Reactions with Free Radicals*. *Bulg. Chem. Commun.*, **42** (2), 2010, 153-161.

12. **V.D.Kancheva**, *Phenolic Antioxidants – Radical Scavenging and Chain Breaking Activities. Comparable study*. *Eur J Lipid Sci Technol.*, **111** (11) 2009, 1072-1089 (отличена като най-добро научно постижение на „Колоквиума по природни вещества”- ИОХЦФ-БАН).

13. A.G.Gopala Krishna, B.R.Lokesh, D.Sugasini, **V.D.Kancheva**; *Evaluation of the Antiradical and Antioxidant Properties of Extracts from Indian Red Chili and black Pepper by in vitro Models*. *Bulg. Chem. Commun.*, **42** (1), 2010, 62-69.

14. I.Tsibranska, I.Seikova, R.Kochanov, **V.Kancheva**, G.Peev; *Perspectives for Integration of Nanofiltration with Solid-Liquid Extraction from Plant Materials*. In: "Nanoscience & Nanotechnology, Section E: Bio-inspired Concepts and Medical Applications", Eds. E.Balabanova, I.Dragieva, Sofia, 2009, Issue 9, 210-212.
15. **V.D.Kancheva**, O.T.Kasaikina, P.S.Denkova, Z.S.Kartasheva, I.R.Totseva, N.V.Yanishlieva; *Study on the Kinetics of Formation and Structure of Mixed Micelles Formed by Surfactants, Antioxidants and Lipid Hydroperoxides*, In: "Nanoscience & Nanotechnology, Section E: Bio-inspired Concepts and Medical Applications", Eds. E.Balabanova, I.Dragieva, Sofia, 2009, Issue 9, 225-227.
16. **V.D.Kancheva**, V.S.Bankova; *Chain - Breaking Antioxidant Activity of Two New Chalcones from Propolis of El Salvador in Homogeneous and Micellar Media*, Bulg. Chem. Commun., **40**, 2008, 546-555.
17. M.Spasova, **V.D.Kortenska-Kancheva**, I.Totseva, G. Ivanova, L. Georgiev, Ts. Milkova; *Synthesis of Cinnamoyl- and Hydroxy-cinnamoyl- Amino Acid Conjugates and Evaluation of Their Antioxidant Activity*, Journal of Peptide Science, **12**, 2006, 369-375.
18. **V.Kancheva**, M.Spasova, I.Totseva, Ts.Milkova, Study on the Antioxidant Activity of N-hydroxycinnamoyl-Amino Acid Conjugates in Bulk Lipid Autoxidation, Riv. Ital. delle Sost. Grasse, **83**, 2006, 162-169.
19. O.T.Kasaikina, **V.D.Kancheva**, T.V.Maximova, Z.S.Kartasheva, V.V.Vedutenko, N.V.Yanishlieva, V.G.Kondratovich, I.R.Totseva; *Catalytic Effect of Amphiphilic Compounds on the Lipid Oxidation and Lipid Hydroperoxide Decomposition*, Oxidation Communications, **29**, 2006, 574-584.
20. **V.D.Kancheva**, R.Taskova, I.Totseva, N.Handjieva; *Antioxidant Activity of Extracts, Fractions and Flavonoid Constituents from Carthamus lanatus L.*, Riv. Ital. delle Sost. Grasse, **84**, 2007, 77-86.
21. **V.D.Kancheva**, D.Dinchev, M.Tsimidou, I.Kostova, N.Nenadis; *Antioxidant Properties of Tribulus Terrestris from Bulgaria and Radical Scavenging Activity of its Flavonoid Components*, Riv. Ital. delle Sost. Grasse, **54**, 2007, 10-19.
22. **V.D.Kortenska-Kancheva**, N.V.Yanishlieva, K.S.Kyoseva, M.I.Boneva, I.R.Totseva; *Antioxidant Activity of Cinnamic Acid Derivatives in Presence of a Fatty Alcohol During the Lard Autoxidation*, Riv. Ital. delle Sost. Grasse, **82**, 2005, 87-92.
23. **V.D.Kortenska-Kancheva**, V.S.Bankova, M.P.Popova; *Antioxidant Capacity of New Chalcones from Propolis of El Salvador – during Methyl Linoleate Oxidation in Micellar Solutions*, Oxidation Communications, **28** (3), 2005, 525-535.
24. **V.D.Kortenska-Kancheva**, V.A.Belyakov; *Simulation of Lipid Oxidation Kinetics in Various Mechanisms of Hydroperoxides Decomposition*, Riv. Ital. delle Sost. Grasse, **82**, 2005, 177-185.
25. W.Bors, **V.D.Kortenska**, L.Y.Foo, K.Stettmaier; *Density-Functional Calculations of Gallotannin and Ellagitannin Aroxyl Radicals*, Oxidation Communications, **28**, 2005, 273-285 .
26. I.I.Koleva, J.P.H.Linssen, T.A.van Beek, L.N.Evstatieva, **V.Kortenska**, N.Hanjieva; *Antioxidant Activity Screening of Extracts from Sideritis Species (Labiatae) Grown in Bulgaria*; J. Sci. Food Agric., **83**, No8, 2003, 809-819.
27. I.F.Rusina, M.I.Boneva, O.T.Kasaikina, **V.D.Kortenska**, N.V.Yanishlieva; *Evaluation of the Antiradical Efficiency of Cinnamic Acid Derivatives Using a Chemiluminescence Method*, Oxidation Communications, **27**, 2004, 562-570.