

Recent Calorimetry Publications by Richard Kemp

1. Kemp, R.B. (1994). Studies of enthalpy balance and adenosine triphosphate turnover in cultured animal cells. *Pure Appl. Chem.* 66, 479-484.
2. Kemp, R.B., Stephansen, C., Sajid Mohamed & Meredith, R.W.J. (1994). The calorimetric-respirometric ratio: its potential as a cytotoxicity test. *ATLA* 22, 364-376.
3. Kemp, R.B., Hoare, S., Schmalfeldt, C.M., Bridge, C., Evans, P.M. & Gnaiger, E. (1994). A thermochemical study of the production of lactate by glutaminolysis and glycolysis in mouse macrophage hybridoma cells. *Modern Trends in Biothermokinetics*, Vol.3, *What is Controlling Life? 50 Years After Erwin Schrödinger's "What is Life?"* (Eds. E. Gnaiger, F.N. Gellerich and M. Wyss), pp.226-231. Innsbruck U.P., Innsbruck, Austria.
4. Kemp, R.B. & Schaarschmidt, B. (Eds.). *Festschrift Dedicated to Professor Ingolf Lamprecht on the Occasion of his 60th Birthday* (Special Issue). *Thermochim. Acta*, 250, No.2, 215-381 (1995).
5. Kemp, R.B. & Schaarschmidt, B. (Eds.). *Calorimetric and Thermodynamic Studies in Biology* (Special Issue). *Thermochim. Acta*, 251, 1-402 (1995).
6. Kemp, R.B., Belicic-Kolsek, A., Hoare, S., Schmalfeldt, M., Townsend, C. & Evans, P.M. (1995). A Thermochemical Study of Metabolic Pathways in Activated and Triggered 2C11-12 Mouse Macrophage Hybridoma Cells. *Thermochim. Acta*, 250, 259-276.
7. Kemp, R.B. (1995). Calorimetry of Plants: a Snapdragon's View. *Thermochim. Acta*, 251, 389-391.
8. Kemp, R.B. (1996). Heat dissipation and metabolism in isolated animal cells. *Principles of Medical Biology*, Vol.4, *Cell Chemistry and Physiology*, (Eds. E.E. Bittar and N. Bittar), Part III, Ch. 11, 303-329. JAI Press, Greenwich, Connecticut, USA.
9. Guan, Y. & Kemp, R.B. (1996). Medium design with the aid of heat flux measurement in mammalian cell culture. *Biothermokinetics of the Living Cell*, (Eds. H.V. Westerhoff, J.L. Snoep, F.E. Sluse, J.E. Wijker, & B.N. Kholodenko), 387-397. BTK Press, Amsterdam.
10. Kemp, R.B., Evans, P.M. & Guan, Y. (1996). Heat flux as a control variable in optimizing the growth process in batch culture. *Biothermokinetics of the Living Cell*, (Eds. H.V. Westerhoff, J.L. Snoep, F.E. Sluse, J.E. Wijker, & B.N. Kholodenko), 398-406. BTK Press, Amsterdam.
11. Kemp, R.B., Evans, P.M. & Guan, Y. (1997). An Enthalpy Balance Approach to Studies of Metabolic Activity in Mammalian Cells. *J. Thermal Anal.* 49, 755-770.
12. Guan, Y., Evans, P.M. & Kemp, R.B. (1997). A Modified Flow Microcalorimeter for measuring the Heat Dissipation by Mammalian Cells in Batch Culture. *J. Thermal Anal.* 49, 785-794.
13. Kidane, A., Guan, Y., Evans, P.M., Kaderbhai, M.A. & R.B. Kemp. (1997). Comparison of Heat Yields in Wild and Genetically Engineered Chinese Hamster Ovary Cells. *J. Thermal Anal.* 49, 771-784.
14. Kemp, R.B. & Guan, Y. (1997). Heat Flux and the Calorimetric-respirometric Ratio as Measures of Catabolic Flux in Mammalian Cells. *Thermochim. Acta*, 300, 199-211.
15. Kemp, R.B. & Guan, Y. (1998). Probing the Metabolism of Genetically-engineered Mammalian Cells by Heat Flux. *Thermochim. Acta* 309, 63-78.
16. Kemp, R.B., Hansen, L., Lamprecht, I. & von Stockar, U. (Eds.) *Biothermodynamics: From Human Beings to Molecules* (Special Volume). *Thermochim. Acta*, 309 1-202 (1998).

17. Guan, Y., Evans, P.M. & Kemp, R.B. (1998) Specific Heat Flow Rate: An On-line Monitor and Potential Control Variable of Specific Metabolic Rate in Animal Cell Culture that combines Microcalorimetry with Dielectric Spectroscopy. *Biotechnol. Bioeng.* 58, 464-477.
18. Guan, Y. & Kemp, R.B. (1998) The Viable Cell Monitor: A Dielectric Spectroscope for Growth and Metabolic Studies of Animal Cells on Macroporous beads. *New Developments and New Applications in Animal Cell Technology. Proceedings of the 15th ESACT Meeting.* (Eds. O.-W. Merten, P. Perrin and B. Griffiths), pp. 321-328., Kluwer, Dordrecht, The Netherlands.
19. Guan, Y. & Kemp, R.B. (1998) Dynamic Medium Optimisation by On-line Heat Flux Measurement and Stoichiometric Modelling in Animal Cell Culture. *New Developments and New Applications in Animal Cell Technology. Proceedings of the 15th ESACT Meeting.* (Eds. O.-W. Merten, P. Perrin and B. Griffiths), pp. 355-357, Kluwer, Dordrecht, The Netherlands.
20. Kemp, R.B. (1998) Nonscanning Calorimetry. *Handbook of Thermal Analysis and Calorimetry*, (Ed. P. Gallagher), Vol.1; *Principles and Practice* (Ed. M. Brown), Ch. 14, pp. 577-675, Elsevier, Amsterdam.
21. Kemp, R.B. (1999) A New Light on Cell Biology from an Old Lamp. *Chemical Thermodynamics for the 21st Century* (Ed. T.M. Letcher), Chapter 23, pp. 277-289, Blackwell Science, Oxford, UK.
22. Guan, Y.H. & Kemp, R.B. (1999) On-line Heat Flux Measurements Improve the Culture Medium for the Growth and Productivity of Genetically Engineered CHO cells. *Cytotechnol.* 30, 107-120.
23. Guan, Y. H. & Kemp, R.B. (1999) Dynamic Medium Optimization by On-line Heat Flux Measurement in Mammalian Cell Culture. *J. Biotechnol.* 69, 95-114.
24. Guan, Y.H., Lloyd, P.C. & Kemp, R.B. (1999) A Calorimetric Flow Vessel for Measuring the Metabolic Activity of Animal Cells. *Thermochim. Acta*, 332, 211-220.
25. Guan, Y.H. & Kemp, R.B. (1999) On-line Detection of Metabolic Demand and Changes to it: Heat Flow Rate in Continuous Cultures of Animal Cells. *Animal Cell Technology: Challenges for the 21st Century* (Eds. K. Ikura, M. Nagao, S. Masuda and R. Sasaki), pp. 57-61, Kluwer, Dordrecht, Netherlands.
26. Guan, Y.H. & Kemp, R.B. (1999) A Model for the On-Line Scrutiny of Metabolism: It's Application to the Changing Nutritional Demands of Cultured Animal Cells. *Proc. 16th ESACT Meeting* (Eds. A. Bernard, B. Griffiths, W. Noé, F. Wurm), Kluwer, Dordrecht, Netherlands.
27. Kemp, R.B. (Ed.). From Macromolecules to Man, Vol. 4 in *Thermal Analysis and Calorimetry* (Series Ed. P. Gallagher), Elsevier, Amsterdam, 1999, 1032pp.
28. Kemp, R.B. and Guan, Y.H. (1999) Microcalorimetric Studies of Isolated Animal Cells, in *Handbook of Thermal Analysis and Calorimetry* Vol.4 (Ed. R.B. Kemp), pp. 557-656, Elsevier, Amsterdam.
29. Kemp, R.B. & Lamprecht, I. (2000) La Vie est donc un Feu pour la Calorimétrie: Half a Century of Calorimetry – Ingemar Wadsö at 70. *Thermochim. Acta*, 348, 1-17.
30. Kemp, R.B. & Guan, Y. (2000) The Application of Heat Flux Measurements to Improve the Growth of Mammalian Cells in Culture. *Thermochim. Acta*, 349, 23-30.
31. Guan, Y.H. & Kemp, R.B. (2000) Chemical Calibration of Flow And Insertion Calorimetric Vessels for Biological Applications: Limitations And Solutions. *Thermochim. Acta*, 349, 163-176.
32. Kemp, R.B. (2000) "Fire burn and Cauldron bubble" (W. Shakespeare): What the Calorimetric-respirometric (CR) Ratio does for our Understanding of Cells? *Thermochim. Acta*, 355, 115-124.
33. Kemp, R.B. (2000) "Gae me ae spark o' Nature's fire" (R. Burns): An Insight to Cell Physiology from Calorimetry. *J. Thermal Anal. Calorimetry*, 60, 831-843.

34. Mukhanov, V.A., Rylkova, O.A. Lopukhina, O.A. & R.B. Kemp (2000). Heat dissipation, Productivity and Biomass Turnover Rate in the Bacterioplankton Community: A Comparative Study of Two Marine Ecosystems. *Ekologiya Morya* (Ecology Of the Sea), 52, 12-17 (in Russian).
35. Kemp, R.B. (2000). Thermodynamics (Biology). *Yearbook of Science & Technology 2001*. pp. 384-386, McGraw-Hill, New York, USA.
36. Kemp, R.B. (2000). Heat Flux and the Calorimetric-Respirometric Ratio as On-line Probes of the Metabolism in Animal Cells cultured in a Bioreactor. *Research Advances in Biotechnology & Bioengineering*, 1, 37-65.
37. Kemp, R.B. (2001). The Application of Heat Conduction Microcalorimetry to Study the Metabolism and Pharmaceutical Modulation of Cultured Mammalian Cells. *Thermochim. Acta*, 380, 229-244.
38. Loseva, N.L., Gordon, L.K., Minibayeva, F.V., Alyabyev, A.Ju., Chernov, V.M., Chernova, O.A., Andreyeva, I.N., Rachimova, G.G., Tribunskih, V.I., Esterina, R.I., Goglev, Ju.B. & Kemp, R.B. (2002). Direct and Indirect Calorimetric Studies of Stress Responses of *Chlorella* Cells to Infection with the *Mycoplasma*, *Acholeplasma laidlawii*. *Thermochim. Acta*, 390, 39-46.
39. Mukhanov, V., Rylkova, O, Lopukhina, O. & Kemp, R.B. (2003). Productivity and thermodynamics of marine bacterioplankton: an inter-ecosystem comparison. *Thermochim. Acta*, 397, 31-35.
40. Loseva, N.L., Alyabyev, A. Ju., Gordon, L.Kh., Andreeva, I.N., Kolesnikov, O.P., Pomomareva, A.A., Chernov, V.M. & Kemp, R.B. (2003). The Energetic Response of *Chlorella* Cells to Infection with *Acholeplasma laidlawii*. *Thermochim. Acta*, 397, 37-47.
41. O'Neill, M.A.A., Beezer, A.E., Labetoulle. C., Nicolaidis, L., Mitchell, J.C., Orchard, J.A., Connor, J.A., Kemp, R.B. & Olomolaiye, D. (2003). The Base Catalysed Hydrolysis of Methyl Paraben: a Test Reaction for Flow Microcalorimeters Used for Determination of Both Kinetic and Thermodynamic Parameters. *Thermochim. Acta*, 399, 63-71.
42. O'Neill, M.A.A., Beezer, A.E., Kemp, R.B., Olomolaiye, D., Volpe, P.L.O. & Oliveira, D. (2004). Practical and theoretical consideration of flow-through microcalorimetry: Determination of "thermal volume" and its flow rate dependence. *Thermochim. Acta* 413 193-199.
43. Mukhanov, V.S., Naidanova, G., Shadrin, N. & Kemp, R.B. (2004). The spring energy budget of the algal mat community in a Crimean hypersaline lake. *Aquatic Ecol.* 38, 375-385.
44. Kemp, R.B. (2004). Thermobiochemical Studies of Animal Cell systems *in vitro*: Evidence of their nature from Bioreactor Studies. *The Nature of Biological Systems as Revealed by Thermal Methods* (ed. D. Lorinczy), Ch. 9, pp. 217-251, Kluwer Academic Publ., Dordrecht, Netherlands.
45. Maskow, T., Olomolaiye, D., Breuer, U. & Kemp, R. (2004). Flow Calorimetry and Dielectric Spectroscopy to Control the Bacterial Conversion of Toxic Substrates into Polyhydroxyalcanoates. *Biotechnol. Bioeng.* 85, 547-552.
46. Feng, Y., Olomolaiye, D., & Kemp, R.B. (2004). Thermobiochemical evidence for the rapid metabolic rate in hybridoma cells genetically engineered to overexpress the anti-apoptotic protein bcl-2 in batch culture. *Thermochim. Acta* 417, 207-216.
47. Loseva, N., Gordon, L., Alyabyev, A., Andreyeva, I., Kolesnikov, O., Chernov, V., Ponomareva, A. and Kemp, R.B. (2004) Effect of induced changes in membrane permeability on the defence response of *Chlorella vulgaris* to infection by *Acholeplasma laidlawii*. *Thermochim. Acta* 422, 95-100.
48. Kemp, R.B., Lamprecht, I. & Singer, D. (Eds). *Energetics of Adaptation and Development: from Molecular Mechanisms to Clinical Practice*, (Special Issue). *Thermochim. Acta* 422, 1-130, 2004.
49. Scott, C.B. & Kemp, R.B. (2005). Direct and indirect calorimetry of lactate oxidation: Implications for whole-body energy expenditure. *J. Sports Sci.* 23, 15-19.
50. Mukhanov, V.S. & Kemp, R.B. (2005). Microcalorimetry of the smallest plankton fraction: in search for the sources of heat dissipation. *Mar. Ecol. J.* 1, 84-98.

51. Thomas Maskow, T., Müller, S., Lösche, A., Harms, H. & Kemp, R. (2006). Control of continuous polyhydroxybutyrate synthesis using calorimetry and flow cytometry *Biotechnol. Bioeng.* 93, 541-552.

IN PRESS

52. Mukhanov, V.S. & Kemp, R.B. Simultaneous photocalorimetric and oxygen polarographic measurements on *Dunaliella maritima* cells reveal a thermal discrepancy that could be due to nonphotochemical quenching. *Thermochim. Acta*
53. T.J. Mdzinarashvili, T.J., Mrevlishvili, G.M., Tsinadze, L.T., Ivanova, A.T., Janelidze, N., Kiziria, E.L., Tushishvili, D.G., Tediashvili, M.I. & Kemp, R.B. Pycnometric, Viscometric and Calorimetric Studies of the Process to Release the Double-Stranded DNA from the Un Bacteriophage. *Biophys. Chem.*,