

# CURRICULUM VITAE

KUO-BIN LI(李國彬)

---

## ADDRESS

Associate professor  
Institute of Biomedical Informatics  
Center for Systems and Synthetic Biology  
National Yang-Ming University  
Taipei, 112, Taiwan  
Office phone: +886 2 2826 7391  
Email: [kbli@ym.edu.tw](mailto:kbli@ym.edu.tw)

生物醫學資訊研究所  
系統與合成生物學研究中心  
國立陽明大學

---

## EDUCATION

- 09/1972--06/1981 中華婦女反共聯合會台北市分會附設私立復興中小學
- 09/1981--06/1984 台北市立建國高級中學
- 10/1984--06/1988 B.S., Department of chemistry, National Taiwan University, Taipei, Taiwan 國立台灣大學化學系
- 01/1992--10/1996 Ph.D., Department of chemistry, McGill University, Montréal, Québec, Canada.  
Specialization: nuclear magnetic resonance(NMR) spectral analysis, protein structure determination, computational chemistry  
Thesis: *Development of Computer-Assisted Resonance Assignment Methods for Protein Heteronuclear 3D NMR Spectra*  
Supervisor: Prof. B. C. Sanctuary
- 

## EMPLOYMENT

- 11/1996--01/1997 Postdoctoral research fellow, Department of chemistry, McGill University, Montréal, Québec, Canada.  
Supervisor: Prof. B. C. Sanctuary  
Specialization: NMR spectral analysis
- 02/1997--09/1999 Postdoctoral research fellow, Rowland Institute at Harvard, Harvard University, Cambridge 02142, Massachusetts, USA. (<http://www.rowland.harvard.edu>)  
Supervisor: Dr. Jeff C. Hoch  
Specialization: NMR spectral analysis, structural biology, distributed parallel programming

|                  |  |
|------------------|--|
| 01/2000--11/2000 | Research fellow, Bioinformatics division, Biomedical Engineering Center, Industrial Technology Research Institute, Taiwan 工業技術研究院生醫工程中心生物資訊部研究員<br>Specialization: pairwise sequence homology comparison, PC/workstation cluster computing |
| 11/2000--09/2001 | Senior bioinformatics consultant, DigiGenomics Inc., Taipei, Taiwan 基因數碼科技公司<br>Specialization: management of biological database, sequence annotation, DNA microarray   |
| 12/2001--07/2006 | Research Scientist and Team Leader, Bioinformatics Institute, Agency for Science, Technology and Research (A*Star), Ministry of Trade, Singapore   |
| 07/2002--06/2006 | Adjunct assistant professor, Department of biochemistry, National University of Singapore, Singapore   |
| 07/2003--06/2005 | Master thesis supervisor, Singapore-Massachusetts Institute of Technology (MIT) Alliance, Program in high performance computation for engineered systems, National University of Singapore, Singapore                                      |
| 08/2006--07/2008 | Associate Research Scientist, Center for Systems and Synthetic Biology, National Yang-Ming University, Taipei, Taiwan 國立陽明大學系統與合成生物學研究中心副研究員   |
| 08/2008--present | Associate professor, Institute of Biomedical informatics, National Yang-Ming University, Taipei, Taiwan 國立陽明大學生物醫學資訊研究所副教授   |
| 08/2011--07/2012 | Acting Chairman, Institute of Biomedical informatics, National Yang-Ming University, Taipei, Taiwan 國立陽明大學生物醫學資訊研究所代理所長  |

---

## PUBLICATIONS

1. *Predicting membrane protein types by incorporating protein topology, domains, signal peptides, and physicochemical properties into the general form of Chou's Pseudo Amino Acid Composition*, Yen-Kuang Chen and Kuo-Bin Li, accepted by *J. Theo. Biol.*, 2012.
2. *Correlation of expression profiles between microRNAs and mRNA targets using NCI-60 data*, Yu-Ping Wang and Kuo-Bin Li, *BMC Genomics*, 10:218, 2009.
3. *MiRTif: a support vector machine-based microRNA target interaction filter*, Yuchen Yang, Yu-Ping Wang and Kuo-Bin Li, *BMC Bioinformatics*, 9(Suppl 12):S4, 2008.
4. *Incorporating the use of amino acid properties to predict the significance of missense mutations*, Tze-Chuen Lee, Ann SG Lee and Kuo-Bin Li, *Amino Acids*, 35(3), 615-626, 2008.
5. *Remote protein homology detection using recurrence quantification analysis and amino acid physicochemical properties*, Yuchen Yang, Erwin Tantoso and Kuo-Bin Li, *J. Theor. Biol.*, 2008, 252(1), 145-154.

6. *Profiling microRNA expression in hepatocellular carcinoma reveals microRNA-224 up-regulation and apoptosis inhibitor-5 as a microRNA-224-specific target*, Yu Wang, Alvin T. C. Lee, Joel Z. I. Ma, Jingbo Wang, Jianwei Ren, Yuchen Yang, Erwin Tantoso, **Kuo-Bin Li**, London L. P. J. Ooi, Patric Tan and Caroline G. L. Lee, *J. Biol. Chem.*, 283(19), 13205-13215, 2008.
7. *AAIndexLoc: predicting subcellular localization of proteins based on a new representation of sequences using amino acid indices*, Erwin Tantoso and **Kuo-Bin Li**, *Amino Acids*, 35(2), 345-353, 2008.
8. *Beyond string algorithms: protein sequence analysis using wavelet transforms*, Arun Krishnan and **Kuo-Bin Li**, in *Analysis of biological data: a soft computing approach*, Ed. S. Bandyopadhyay, U. Maulik and J. T. L. Wang, World Scientific, 2007.
9. *iHAP - integrated haplotype analysis pipeline for characterizing the haplotype structure of genes*, Chun Meng Song, Boon Huat Yeo, Erwin Tantoso, Yuchen Yang, Yun Ping Lim, **Kuo-Bin Li** and Gunaretnam Rajagopal, *BMC Bioinformatics*, 2006, 7, 525.
10. *Multiresolution analysis uncovers hidden conservation of properties in structurally and functionally similar proteins*, Gek Huey Chua, Arun, Krishnan, **Kuo-Bin Li** and Masaru Tomita, *Journal of Bioinformatics and Computational Biology*, 2006, 4(6), 1245-1267.
11. *In silico analysis of p53 using the p53 Knowledgebase: mutations, polymorphisms, microRNAs and pathways*, Yuchen Yang, Erwin Tantoso, Gek Huey Chua, Zhen Xuan Yeo, Felicia Soo Lee Ng, Sum Thai Wong, Cheuk Wang Chung and **Kuo-Bin Li**, *in silico Biology*, 2006, 7, 0005.
12. *How well do HapMap SNPs capture the untyped SNPs?* Erwin Tantoso, Yuchen Yang and **Kuo-Bin Li**, *BMC Genomics*, 2006, 7, 238.
13. *Protein subcellular localization prediction for Gram-negative bacteria using amino acid subalphabets and a combination of multiple support vector machines*, Jiren Wang, Wing-Kin Sung, Arun Krishnan and **Kuo-Bin Li**, *BMC Bioinformatics*, 2005, 6, 174.
14. *WebAllergen: a web server for predicting allergenic proteins*, Tariq Riaz, Hen Ley Hor, Arun Krishnan, Francis Tang and **Kuo-Bin Li**, *Bioinformatics*, 2005, 21(10), 2570-2571.
15. *A tabu search algorithm for post-processing multiple sequence alignment*, Tariq Riaz, Yi Wang and **Kuo-Bin Li**, *Journal of Bioinformatics and Computational Biology*, 2005, 3(1), 145-156.
16. *Immunohistochemical detection of Ki67 in breast cancer correlates with transcriptional regulation of genes related to apoptosis and cell death*, Puay Hoon Tan, Boon Huat Bay, George Yip, Sathiyamoorthy Selvarajan, Patrick Tan, Jeanne Wu, Chee How Lee and **Kuo-Bin Li**, *Modern Pathology*, 2005, 18(3), 374-381.
17. *Y-box binding protein, YB-1, as a marker of tumor aggressiveness and response to adjuvant chemotherapy in breast cancer*, Jingxiang Huang, Puay Hoon Tan, **Kuo-Bin Li**, Ken Matsumoto, Masafumi Tsujimoto and Boon Huat Bay, *International Journal of Oncology*, 2005, 26(3), 607-613.
18. *A Position-specific and consistency-based objective function for iterative multiple sequence Alignment*, Yi Wang, Tariq Riaz, Espen Enerly, Sheng Zeng and **Kuo-Bin Li**, in the *Proceedings of the 6th WSEAS International Conference on Mathematics and computers in biology and chemistry*, Buenos Ayres, Argentina, March 1-3, 2005.
19. *Multiple sequence alignment using an exhaustive and greedy algorithm*, Yi Wang and **Kuo-Bin Li**, *Journal of Bioinformatics and Computational Biology*, 2005, 3(2), 243-255.

20. *The quality of a multiple sequence alignment can be evaluated by a position-specific and consistency-based objective function*, Yi Wang, Tariq Riaz, Espen Enerly, Sheng Zeng and **Kuo-Bin Li**, *WSEAS Transactions on Mathematics and Computers in Biology and Biomedicine*, **2005**, 2(2), 147-157.
21. *Natural antisense as potential regulator of alternative initiation, splicing and termination*, Espen Enerly, Zeng Sheng and **Kuo-Bin Li**, *in silico Biology*, **2005**, 5, 0033.
22. *pSLIP: SVM based protein subcellular localization prediction using multiple physicochemical properties*, Deepak Sarda, Gek-Huey Chua, **Kuo-Bin Li**, and Arun Krishnan, *BMC Bioinformatics*, **2005**, 6, 152.
23. *CMDWave: conserved motifs detection using wavelets*, Tariq Riaz, **Kuo-Bin Li**, Francis Tang and Arun Krishnan, *in silico Biology*, **2005**, 5, 0038.
24. *Predicting allergenic proteins using wavelet transform*, **Kuo-Bin Li**, Praveen Issac and Arun Krishnan, *Bioinformatics*, **2004**, 20, 2572-2578.
25. *An adaptive iterative algorithm for refining multiple sequence alignment*, Yi Wang and **Kuo-Bin Li**, *Computational Biology and Chemistry*, **2004**, 28(2), 141--148.
26. *Multiple sequence alignment using tabu search*, Tariq Riaz, Yi Wang and **Kuo-Bin Li**, *Proceedings of the second Asia-Pacific Bioinformatics Conference*, Dunedin, New Zealand, **2004**.
27. *Rapid motif detection in protein sequences using wavelet transform*, Arun Krishnan, **Kuo-Bin Li** and Praveen Issac, *in silico Biology*, **2004**, 4, 0013.
28. *G-PRIMER, a greedy algorithm for selecting minimal primer set*, Jiren Wang, **Kuo-Bin Li**, and Wing-Kin Sung, *Bioinformatics*, **2004**, 20, 2473-2475.
29. *From genomes to drugs with bioinformatics*, **Kuo-Bin Li**, in *Novel compounds from Natural Products in the New Millennium, Potential and Challenges*, Ed. Benny K. H. Tan, B. H. Bay and Y. Z. Zhu, World Scientific, Singapore, **2004**.
30. *ClustalW-MPI: ClustalW Analysis Using Distributed and Parallel Computing*, **Kuo-Bin Li**, *Bioinformatics*, **2003**, 19(12), 1585--1586.
31. *Modern Spectrum Analysis in Multidimensional NMR Spectroscopy: Comparison of Linear-Prediction Extrapolation and Maximum-Entropy Reconstruction*, Alan S. Stern, **Kuo-Bin Li**, and Jeffrey C. Hoch, *J. Am. Chem. Soc.*, **2002**, 124(9), 1982--1993.
32. *Distributed Parallel Processing for Multidimensional Maximum Entropy Reconstruction*, **Kuo-Bin Li**, Alan S. Stern and Jeffrey C. Hoch, *J. Mag. Reson.*, **1998**, 134(1), 161--163.
33. *Automated assignment of proteins using heteronuclear 3D NMR. 1: Backbone spin systems extraction and creation of polypeptides*, **Kuo-Bin Li** and Bryan C. Sanctuary, *J. Chem. Inf. Comput. Sci.*, **1997**, 37(2), 359--366.
34. *Automated assignment of proteins using heteronuclear 3D NMR. 2: Side chain and sequence-specific assignment*, **Kuo-Bin Li** and Bryan C. Sanctuary, *J. Chem. Inf. Comput. Sci.*, **1997**, 37(3), 467--477.
35. *Automated extraction of amino acid spin systems in proteins using 3D HCCH-COSY/TOCSY spectroscopy and Constrained Partitioning Algorithm(CPA)*, **Kuo-Bin Li** and Bryan C. Sanctuary, *J. Chem. Inf. Comput. Sci.*, **1996**, 36(3), 585--593.