

**Rafael Jiménez-Flores**  
Professor  
Dairy Science Department  
Dairy Products Technology Center  
California Polytechnic State University

## **I. BACKGROUND**

### **EDUCATION**

- Ph. D.** Agricultural and Environmental Chemistry. University of California at Davis, Davis, California. 1989. Research advisor: Professor Tom Richardson. Major: Food Science. Minor: Biochemistry. Dissertation: "Cloning, Sequencing and Expression in *Saccharomyces cerevisiae* of Bovine  $\beta$ -casein."
- M.S.** Food Science. Cornell University, Ithaca, New York. August of 1984. Research advisor: Frank V. Kosikowski. Minor: Chemical Engineering. Thesis: "Physical and Functional Properties of Dried Skim Milk Powder".
- B. S.** Universidad La Salle, México D. F., México. December, 1981. Major: Chemistry (Pharmacobiology Chemistry). Minor: Food Science and Technology. Thesis: "Toxicology and Chemistry of the insect *Macrodactylus subspinosus*".

### **ACADEMIC EXPERIENCE**

- 1999- to date *Professor*. California Polytechnic State University, San Luis Obispo, CA
- 1995-1999. *Associate Professor*. California Polytechnic State University, San Luis Obispo, CA.
- 1990-1995. *Assistant Professor*. University of Illinois, department of Food Science and Technology. Area of research Dairy Biotechnology. Teach course on Dairy Processing. Dairy Chemistry and Biochemistry. Dairy Products Judging.
- 1988-1990 *Staff Research Associate IV*. Conduct independent research for heterologous expression of caseins in yeast. Develop PCR assays for transgenic animal identification. Coordinate undergraduate students in their research. Develop procedure for removal of cholesterol from milk fat. Laboratory management and coordination of six research assistants.
- 1984-88 *Research Assistant*, UCD. Molecular biology techniques for cloning bovine milk proteins. Yeast manipulation to achieve expression and secretion of  $\beta$ -casein.
- 1982-84 *Student* in Pilot Plant for Dairy products, Cornell University. Research involved in milk ultrafiltration, evaporation and spray-drying. Some experience in cheese manufacture.
- 1981-82 *Quality Control Supervisor*, Sam-Fre Candy Factory (México City). Adapted and implemented quality control procedures for raw materials, in-process and finished products. Developed new products, two of which are currently marketed in Mexico City.
- 1980-82 *Teaching Assistant*: General Chemistry, U. La Salle; and Physical Chemistry for Biologists, UNAM. General chemistry lecturer, laboratory supervisor, designer of some experiments, demonstration of various techniques and grading of laboratory performance.

### ***List of Honors***

Milk Industry Foujdaton/ Kraft Outstanding Teaching Award. American Dairy Science Association. June 2003.

Adjunct Professor Oregon State University, Department of Food Science and Nutrition. 2002-to date.

**AZ** Outstanding Instructor 1994-1995. College of Agriculture, UIUC.

Recipient Faculty of the Fogerty Research Fellowship of the NIH. (Minority International Research Training Fellowship). 1997-1999.

Member of the National Technical Advisory Board for Dairy Management Incorporated. A national organization for research funding in Dairy Science.

Adjunct Professor and Researcher of the “Centro de Investigacion en Alimentos y Desarrollo, A. C.” in Hermosillo Sonora, México 1997.

Invited Speaker at the Symposium and Lecturer of the “X Jornada de Ingenieria Bioquimica” organized by the Instituto Tecnologico de Celaya. In Mexico. October 2, 1998.

Adjunct Professor Laval University, Department of Food Science and Nutrition, Collaborator STELA dairy research center. Quebec, Canada. 2000-to date.

Invited Speaker at the 3rd International Food Science and Technology Symposium at UCD; Food for health in the Pacific Rim. Biotechnology Contributions in Dairy.

Co-Organizer of ADSA Symposium: Modern Approaches to Casein Micelle Structure: An Ancient Question.

Chair of Committee for Marshall-Rhone Poulenc International Dairy Science Award. 1996-1997.

Invited Speaker to Seminar at the Universidad Politecnica de Valencia, Spain. May 1997. Milk proteins and their influence in dairy technology.

Chair of Committee for Nomenclature of Milk Proteins and Enzymes, ADSA

Member of the Editorial Board, Journal of Food Biochemistry.

Chair of Graduate Student Research Competition ADSA, 1993-1995

Elected member of the Editorial Board, Journal of Dairy Science.

Minorities in Agriculture Advisor 1992 UIUC, 1996 Cal Poly.

Research Apprentice Program Advisor 1990-1994

Coach of the UIUC Dairy Products Judging Team 1990-1995.

Graduated with Honors (Cum Laude) from Universidad La Salle

### ***Patents***

- 1.U. S. Patent Number 4,689,245. Frank V. Kosikowski and Rafael Jiménez-Flores. LOW-FAT DAIRY COFFEE WHITENER. Aug. 25,1987
- 2.U. S. Patent Number 4,689,151. Frank V. Kosikowski and Rafael Jiménez-Flores. METHOD FOR REMOVAL OF PHARMACEUTICAL ANTIBIOTICS FROM CONTAMINATED MILKS. Aug 25, 1987
- 3.U. S. Patent No. 5,326,579. Tom Richardson and Rafael Jiménez-Flores.PROCESS TO REMOVE CHOLESTEROL FROM DAIRY PRODUCTS. 1989. Awarded, June 1994.

**Patent Applications**

KEMP, Maurice C. / LALUM, Robert B. / JIMENEZ-FLORES, Rafael / LEWIS, David  
E. Nov 2004. SPORICIDAL COMPOSITION (MIONIX CORPORATION),  
PATENT COOPERATION TREATY APPLICATION, patno:WO04095921

Keech, Andrew / Jimenez-Flores, Rafael. May 2005. Novel colostrum fractionation  
process. (ADVANCED PROTEIN SYSTEMS), UNITED STATES PATENT AND  
TRADEMARK OFFICE PRE-GRANT PUBLICATION, patno:US20050092684

***Memberships***

American Dairy Science Association

Institute of Food Technologists

American Chemical Society

American Society for Microbiology

Editorial Board, Journal of Dairy Science

Editorial Board, Journal of Food Biochemistry

Editorial Board, International Journal of Food Science.

## PUBLICATIONS

### *Chapters in Books.*

- Jiménez-Flores, R., Higuera, I., and Pouliot, Y. 2008. Other Novel Dairy Beverages Based on MFGM and Novel Concepts for Dairy-based Beverages. In Specialty Dairy Beverages. **FUNCTIONAL AND SPECIALITY BEVERAGE TECHNOLOGY**, P. Paquin, ED. Woodhead Publishing. (In Press)
- Jiménez-Flores R. and J. Yee. 2007. Low Temperature hard cheeses and semi-hard washed cheeses. In **Improving the flavor of cheese**. Chapter 20: 444-473. Bart Weimer. Woodhead Publishing Limited Abington Hall, Abington Cambridge
- Segura Nieto, M and Jiménez-Flores, R. 1998. Genetic Modification of Plant Seed Storage Proteins for Food Production. In Molecular Biotechnology for **Plant Food Production**. (O. Paredes Ed.). Technomic Publishing Co. Lancaster, PA. Pp 411-492.
- Jiménez-Flores, R. and Bleck, G. T. 1995. Biotechnology and Food Proteins. in **Food Proteins**. (S. Nakai Ed.) VCH Publishers, Inc. New York.
- Jiménez-Flores, R., Klipfel, N. and Tobias, J. 1992. Ice Cream. in **Dairy Science and Technology**, Vol II Product Manufacture (Y Hui ed.), pp 57-159. VCH Publishers Inc., New York.
- Richardson, T., Oh, S., Jiménez-Flores, R., Kumosinski, T. F., Brown, E. M. and Farrell, H. 1992. Molecular Modeling and Genetic Engineering of Milk Proteins. in **Advanced Dairy Chemistry Vol-1: Proteins**, (P. F. Fox ed.). pp 545-577. Elsevier Applied Science. London.
- Creamer, L., Oh, S., Jiménez-Flores, R. and Richardson, T. 1989. Genetic Modifications of Milk Proteins. in **Food Proteins** ( J. E. Kinsella and W. G. Soucie eds.) The American Oil Chemists' Society, Champaign IL.
- Kang, Y., Jiménez-Flores, R. and Richardson, T. 1986. Casein genes and genetic engineering of the caseins, in **Genetic Engineering of Animals: An Agricultural Perspective**. J. W. Evans and A. Hollander (eds). Plenum Press, New York, pp. 95-111.
- Jiménez-Flores, R. and Richardson, T. 1986. Effects of chemical, genetic and enzymatic modifications on protein functionality, in **Developments in Food Biotechnology**. R. King (ed). Applied Science Publishers, London, pp. 87-137.
- Jiménez-Flores, R., Kang, Y. and Richardson, T. 1986. Genetic engineering of enzymes and food proteins, in **Protein Modifications: Food and Pharmacological Aspects**. R. E. Feeny and J. W. Whitaker (eds). Marcel Dekker, New York, pp. 155-179.

### *Peer Reviewed Papers 2008-2001*

1. Jimenez-Flores, R.; Brisson, G., The milk fat globule membrane as an ingredient: why, how, when? *Dairy Science & Technology* **2008**, 88, (1, 3rd International Spray Dried Milk Conference (San Francisco - USA - 26-28 February 2007), 5.

2. Morin, P.; Jimenez-Flores, R.; Pouliot, Y., Effect of processing on the composition and microstructure of buttermilk and its milk fat globule membranes. *International Dairy Journal* **2007**, 17, (10), 1179.
3. Morin, P.; Britten, M.; Jimenez-Flores, R.; Pouliot, Y., Microfiltration of buttermilk and washed cream buttermilk for concentration of milk fat globule membrane components. *Journal Of Dairy Science* **2007**, 90, (5), 2132.
4. Ortiz-Gonzalez, G.; Jimenez-Flores, R.; Bremmer, D. R.; Clark, J. H.; DePeters, E. J.; Schmidt, S. J.; Drackley, J. K., Functional properties of butter oil made from bovine milk with experimentally altered fat composition. *Journal Of Dairy Science* **2007**, 90, 5018.
5. Yee, J. L.; Khalil, H.; Jimenez-Flores, R., Flavor partition and fat reduction in cheese by supercritical fluid extraction: processing variables. *Lait* **2007**, 87, 269.
6. Costa, M. R.; Brisson, G.; Gigante, M. L.; Tongl, P. S.; Jimenez-Flores, R., Effects of refrigeration and calcium on whey protein aggregation. *Journal Of Animal Science* **2007**, 85, 483.
7. Bachiero, D.; Uson, S.; Jimenez-Flores, R., Lipid binding characterization of lactic acid bacteria in dairy products. *Journal Of Animal Science* **2007**, 85, 490.
8. Costa, M. R.; Brisson, G.; Gigante, M. L.; Tong, P. S.; Jimenez-Flores, R., Effects of refrigeration and calcium on whey protein aggregation. *Poultry Science* **2007**, 86, 483.
9. Elizondo-Bachiero, D. T.; Uson, S., III; Jimenez-Flores, R., Lipid binding characterization of lactic acid bacteria in dairy products. *Abstracts of the General Meeting of the American Society for Microbiology* **2007**, 107, 523.
10. Beam, M. K.; Lassonde, L. W.; Veltri, B. C.; Taylor, S. J.; Jimenez-Flores, R.; DePeters, E. J., Fatty acid composition and thermal properties of lipid from milk and butter from lactating Holstein cows fed a supplemental lipid either high or low in palmitic acid. *Journal Of Animal Science* **2006**, 84, 106.
11. Iniguez, C.; Sharpe, J.; Acedo-Felix, E.; Jimenez-Flores, R., Evaluation of adherence of Bifidobacterium and Lactobacillus strains to cell membranes by blot analysis and optical tweezers. *Journal Of Animal Science* **2006**, 84, 182.
12. Jimenez-Flores, R.; Mendez-Cruz, R.; Ojeda-Ortiz, J.; Munoz-Molina, R.; Balderas-Carrillo, O.; de la Luz Diaz-Soberanes, M.; Lebecque, S.; Saeland, S.; Daneri-Navarro, A.; Garcia-Carranca, A.; Ullrich, S. E.; Flores-Romo, L., High-risk human papilloma virus infection decreases the frequency of dendritic Langerhans' cells in the human female genital tract. *Immunology* **2006**, 117, (2), 220.
13. Jimenez-Flores, R.; Morin, P.; Pouliot, Y., A comparative study of the fractionation of regular buttermilk and whey buttermilk by microfiltration. *Journal of Food Engineering/Journal of Food Engineering* **2006**, 77, (3), 521.
14. Jinjara, S.; Morin, P.; Olabi, A.; Jimenez-Flores, R., Sensory evaluation of a novel ingredient produced from buttermilk. *Journal Of Animal Science* **2006**, 84, 319.
15. Jinjara, S.; Olabi, A.; Jimenez-Flores, R.; Walker, J. H., Sensory, functional, and analytical comparisons of whey butter with other butters. *Journal Of Dairy Science* **2006**, 89, (7), 2428.

16. Jinjarak, S.; Olabi, A.; Jimenez-Flores, R.; Sodini, I.; Walker, J. H., Sensory evaluation of whey and sweet cream buttermilk. *Journal Of Dairy Science* **2006**, 89, (7), 2441.
17. Krommenhoek, P.; Gallagher, G.; Jimenez-Flores, R.; Hagen, J.; Gragson, D., Thermodynamic and structural analysis of milk fat globule membrane monolayers. *Faseb Journal* **2006**, 20, (5), A916.
18. Laubscher, A.; Henderson, S.; Medrano, J. F.; Rincon, G.; Jimenez-Flores, R., Correlation of DGAT1 genetic variants with fat content in the Cal Poly Herd. *Journal Of Animal Science* **2006**, 84, 168.
19. Morin, P.; Jimenez-Flores, R.; Pouliot, Y., Effect of processing on the composition and structure of buttermilk and of its milk fat globule membranes. *Journal Of Animal Science* **2006**, 84, 317.
20. Morin, P.; Pouliot, Y.; Jimenez-Flores, R., A comparative study of the fractionation of regular buttermilk and whey buttermilk by microfiltration. *Journal Of Food Engineering* **2006**, 77, (3), 521.
21. Sodini, I.; Morin, P.; Olabi, A.; Jimenez-Flores, R., Compositional and functional properties of buttermilk: A comparison between sweet, sour, and whey buttermilk. *Journal Of Dairy Science* **2006**, 89, (2), 525.
22. Uson, S.; Immoos, C.; Jimenez-Flores, R., Validation of ED-XRF as a reliable method for determining the mineral composition of skim milk powders. *Journal Of Animal Science* **2006**, 84, 177.
23. Jimenez-Flores, R.; Ye, A. Q.; Singh, H., Interactions of whey proteins during heat treatment of oil-in-water emulsions formed with whey protein isolate and hydroxylated lecithin. *Journal Of Agricultural And Food Chemistry* **2005**, 53, (10), 4213.
24. Creamer, L. K.; Nilsson, H. C.; Paulsson, M. A.; Coker, C. J.; Hill, J. P.; Jimenez-Flores, R., Effect of genetic variation on the tryptic hydrolysis of bovine beta-lactoglobulin A, B, and C. *Journal Of Dairy Science* **2004**, 87, (12), 4023.
25. Creamer, L. K.; Bienvenue, A.; Nilsson, H.; Paulsson, M.; van Wanroij, M.; Lowe, E. K.; Anema, S. G.; Boland, M. J.; Jimenez-Flores, R., Heat-induced redistribution of disulfide bonds in milk proteins. 1. Bovine beta-lactoglobulin. *Journal Of Agricultural And Food Chemistry* **2004**, 52, (25), 7660.
26. Doyle, N. M.; Jimenez-Flores, D. J.; Ramin, S. M., Medical versus surgical management of missed abortions: An economic analysis. *Obstetrics And Gynecology* **2004**, 103, (4), 6S.
27. Elizondo-Bachiero, D. T.; Benavides, A.; Jimenez-Flores, R., Screening and binding characterization of lactic acid bacteria with milk fat globular membrane components. *Abstracts of the General Meeting of the American Society for Microbiology* **2004**, 104, 487.
28. Farrell, H. M.; Jimenez-Flores, R.; Bleck, G. T.; Brown, E. M.; Butler, J. E.; Creamer, L. K.; Hicks, C. L.; Hollar, C. M.; Ng-Kwai-Hang, K. F.; Swaisgood, H. E., Nomenclature of the proteins of cows' milk - Sixth revision. *Journal Of Dairy Science* **2004**, 87, (6), 1641.
29. Lowe, E. K.; Anema, S. G.; Bienvenue, A.; Boland, M. J.; Creamer, L. K.; Jimenez-Flores, R., Heat-induced redistribution of disulfide bonds in milk proteins. 2.

- Disulfide bonding patterns between bovine beta-lactoglobulin and kappa-casein. *Journal Of Agricultural And Food Chemistry* **2004**, 52, (25), 7669.
30. Morin, P.; Jimenez-Flores, R.; Pouliot, Y., Effect of temperature and pore size on the fractionation of fresh and reconstituted buttermilk by microfiltration. *Journal Of Dairy Science* **2004**, 87, (2), 267.
  31. Ward, R. E.; Watzke, H. J.; Jimenez-Flores, R.; German, J. B., Bioguided processing: A paradigm change in food production. *Food Technology* **2004**, 58, (5), 44.
  32. Alvarez, V.; Jimenez-Flores, R., Cheeses from different countries of Latino America. *Journal of Dairy Science* **2003**, 86, (Supplement 1), 81.
  33. Arendts, M.; Kitts, C.; Jimenez-Flores, R., Development of endospore-specific primers for the analysis of microbial populations in milk powder. *Journal of Dairy Science* **2003**, 86, (Supplement 1), 362.
  34. Astaire, J. C.; Ward, R.; German, J. B.; Jimenez-Flores, R., Concentration of polar MFGM lipids from buttermilk by microfiltration and supercritical fluid extraction. *Journal Of Dairy Science* **2003**, 86, (7), 2297.
  35. Bienvenue, A.; Singh, H.; Jimenez-Flores, R., Rheological properties of concentrated skim milk: Influence of heat treatment and genetic variants on the changes in viscosity during storage. *Journal of Dairy Science* **2003**, 86, (Supplement 1), 292.
  36. Bienvenue, A.; Jimenez-Flores, R.; Singh, H., Rheological properties of concentrated skim milk: Importance of soluble minerals in the changes in viscosity during storage. *Journal Of Dairy Science* **2003**, 86, (12), 3813.
  37. Bienvenue, A.; Jimenez-Flores, R.; Singh, H., Rheological properties of concentrated skim milk: Influence of heat treatment and genetic variants on the changes in viscosity during storage. *Journal Of Agricultural And Food Chemistry* **2003**, 51, (22), 6488.
  38. Izco, J. M.; Tormo, M.; Harris, A.; Tong, P. S.; Jimenez-Flores, R., Optimization and validation of a rapid method to determine citrate and inorganic phosphate in milk by capillary electrophoresis. *Journal Of Dairy Science* **2003**, 86, (1), 86.
  39. Lassonde, L.; Jimenez-Flores, R., Aerobic endospore distribution in a process to produce high phospholipid ingredients from commercial reconstituted buttermilk. *Journal of Dairy Science* **2003**, 86, (Supplement 1), 290.
  40. Morin, P.; Jimenez-Flores, R.; Pouliot, Y., Effect of pore size and temperature on the fractionation of buttermilk using microfiltration. *Journal of Dairy Science* **2003**, 86, (Supplement 1), 292.
  41. Murillo, C.; Kitts, C.; Jimenez-Flores, R., Monitoring spores and spore-forming bacteria populations in commercial skim milk powder production plants using conventional and molecular methods. *Journal of Dairy Science* **2003**, 86, (Supplement 1), 368.
  42. Arendts, M. M.; Rife, A. J.; Jimenez-Flores, R., Development of endospore-specific primers for the TRFP analysis of microbial populations in milk powder. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 328.
  43. Astaire, J. C.; Vyas, H. K.; Jimenez-Flores, R., Extraction of lipids from buttermilk using supercritical carbon dioxide. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 288.

44. Bienvenue, A.; Norris, C. S.; Boland, M. J.; Creamer, L. K.; Jimenez-Flores, R., Disulfide bonding patterns between beta-lactoglobulin and kappa-casein in a heated and spray-dried milk-model. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 340.
45. Bourzac, K.; Bernard, A.; Sanders, M. E.; Jimenez-Flores, R., Factors influencing cell count of a probiotic *Lactobacillus crispatus* strain. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 329.
46. Creamer, L. K.; Manderson, G. A.; Hong, Y. H.; Havea, P.; Cho, Y. H.; Singh, H.; Bienvenue, A.; Jimenez-Flores, R., Heat-induced reactions involving beta-lactoglobulin and other milk proteins in milk, whey, and model systems. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 50.
47. Gomez-Poot, J. M.; Espinoza-Avalos, J.; Jimenez-Flores, S. G., Vegetative and reproductive characteristics of two species of *Batophora* (Chlorophyta, Dasycladaceae) from Chetumal Bay, Quintana Roo, Mexico. *Botanica Marina* **2002**, 45, (2), 189.
48. Groleau, P. E.; Jimenez-Flores, R.; Gauthier, S. F.; Pouliot, Y., Fractionation of beta-lactoglobulin tryptic peptides by ampholyte-free isoelectric focusing. *Journal Of Agricultural And Food Chemistry* **2002**, 50, (3), 578.
49. Harris, A.; Tong, P.; Vink, S.; Izco, J.; Jimenez-Flores, R., Effects of seasonal and regional variations in milk components on the buffering capacity of milk in California. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 289.
50. Izco, J. M.; Tormo, M.; Tong, P. S.; Jimenez-Flores, R., Validation of capillary electrophoresis for the ultra-rapid determination of inorganic phosphate and citrate in milk. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 286.
51. Izco, J. M.; Tormo, M.; Jimenez-Flores, R., Development of a CE method to analyze organic acids in dairy products: Application to study the metabolism of heat-shocked spores. *Journal Of Agricultural And Food Chemistry* **2002**, 50, (7), 1765.
52. Izco, J. M.; Tormo, M.; Jimenez-Flores, R., Rapid simultaneous determination of organic acids, free amino acids, and lactose in cheese by capillary electrophoresis. *Journal Of Dairy Science* **2002**, 85, (9), 2122.
53. Murillo, C.; Jimenez-Flores, R., Monitoring endospores and endospore-forming bacteria populations in commercial skim milk powder production plants. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 37.
54. Newman, J.; Jimenez-Flores, R., Utilization of dot blots to screen probiotic *Lactobacilli* for mucin binding. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 327.
55. Rife, A.; Jimenez-Flores, R.; Kitts, C.; Kubinski, M., The detection of *Bacillus* endospores during low heat skim milk powder processing using nucleic acid technology. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 17.
56. Spill, M.; Guinard, J. X.; Jimenez-Flores, R., Sensory and instrumental measurements of the sensory properties of powdered buttermilk. *Journal of Dairy Science* **2002**, 85, (Supplement 1), 17.
57. Vyas, H. K.; Izco, J. M.; Jimenez-Flores, R., Scale-up of native beta-lactoglobulin affinity separation process. *Journal Of Dairy Science* **2002**, 85, (7), 1639.

58. Choi, B. K.; Bleck, G. T.; Jimenez-Flores, R., Cation-exchange purification of mutagenized bovine beta-casein expressed in transgenic mouse milk: Its putative Asn(68)-linked glycan is heterogeneous. *Journal Of Dairy Science* **2001**, 84, (1), 44.
59. Choi, B. K.; Jimenez-Flores, R., Expression and purification of glycosylated bovine beta-casein (L70S/P71S) in *Pichia pastoris*. *Journal Of Agricultural And Food Chemistry* **2001**, 49, (4), 1761.
60. Izco, J. M.; Tormo, M.; Jimenez-Flores, R., Use of Capillary Electrophoresis (CE) to determine metabolic organic acids in milk. *Journal of Dairy Science* **2001**, 84, (Supplement 1), 382.
61. Vyas, H. K.; Izco, J. M.; Jimenez-Flores, R., Scale up and mass balance of affinity purification of native beta-lactoglobulin. *Journal of Dairy Science* **2001**, 84, (Supplement 1), 59.

*Prior to joining Cal Poly.*

- Kim, H.H. and Jiménez-Flores, R. 1994. Comparison of Milk Proteins Using Preparative Isoelectric Focusing Followed by Polyacrylamide Gel Electrophoresis. *J. Dairy Sci.* 77(8):2177-2190.
- Bleck, G.T., Choi B., Wheeler M.B and Jiménez-Flores, R. (1995) Modification of bovine  $\beta$ -casein to improve the characteristics and manufacturing properties of cow's milk. Illinois Dairy Report, University of Illinois Champaign-Urbana, 61-64.
- Bleck, G.T., Jiménez-Flores, R. and Wheeler M.B. (1994) Production of transgenic animals with altered milk as a tool to modify milk composition, increase animal growth and improve reproductive performance. Proceedings of the XXIX Simposio Internazionale di Zootecnica, Milan, Italy, May 13, 1994.
- Aslam, M., Jiménez-Flores, R., Kim, H-H. and W. L. Hurley. 1993. Two dimensional protein profile of mammary secretions using rotofor isoelectric focusing and SDS-PAGE. *J. Dairy Sci.* 77(6):1529-1536.
- Jiménez-Flores, R. and H-H. Kim. 1993. Analysis of milk proteins using preparative isoelectric focusing. Newsletter of the IDF **139**: 53-56 (Supplement)
- Donovan, S. M., McNeil, L. K. Jiménez-Flores, R., and Odle J. 1993. Insulin-Like growth factors and IGF binding proteins in porcine serum and milk during lactation. *Pediatr Res.* 53(2): 153-168.
- Potter, S. M., R. Jiménez-Flores, J. Pollack, T. Lone, and M. D. Berber-Jiménez. 1993 Protein-Saponin Interaction and Its Influence on Blood Lipids. *J. Agric. Food Chem.* 41 (8): 1287-1291.
- Kim, H-H. and R. Jiménez-Flores. 1993. Rapid Separation of Bovine Caseins and Skim Milk Proteins by Preparative Isoelectric Focusing. *J. Food Biochem.* 16: 307-321.
- Hurley, W. L., S. Zou, C. E. Magura and R. Jiménez-Flores. 1992. Heating Skim Milk Alters Migration of Immunoreactive Milk Proteins in Acrylamide Gels. *J. Agric. Food Chem.* 41 (2):280-282.
- Jiménez-Flores, R. and Richardson, T. 1991. Future possibilities using biotechnological methods to improve milk quality. pp 726-737. In Proceedings of the XXII International Dairy Congress, (October 8-12, 1990, Montreal) Vol I. International Dairy Federation, Ottawa.

- Liang Q., Jiménez-Flores, R. and Richardson T. 1991. Cloning two cDNA sequences coding for lactoferrin from human mammary gland.. J. Biol. Chem. Genbank.
- Jiménez-Flores, R., Richardson, T. and Bisson, L. 1989. Expression of bovine  $\beta$ -casein in *Saccaromyces cerevisiae* and characterization of the protein produced in vivo. J. Agric.Food Chem. **38**:1134-1141
- McKnight, R., Jiménez-Flores, R., Kang, Y., Creamer, L.K. and Richardson, T. 1989. Cloning and sequencing of a cDNA coding for bovine  $\alpha_{S1}$ -A casein from mammary tissue of a homozygous B variant cow. J. Dairy Sci. **72**:2464-2473
- Jiménez-Flores, R. and Richardson, T. 1988. Genetic engineering of the caseins to modify the behavior of milk during processing: A review. J. Dairy Sci. **71**(10): 2640-2654.
- Creamer, L.K., Jiménez-Flores, R. and Richardson T. 1988. Genetic modification of food Proteins. Trends in Biotechnology **6**(7): 163-169.
- Jiménez-Flores, R., Kang, Y. and Richardson, T. (1987). Cloning and sequence analysis of bovine  $\beta$ -casein cDNA. Biochem. Biophys. Res.Comm. **142**: 617-621.
- Jiménez-Flores, R. and Kosikowski F. V. (1986). Nonfat dairy coffee whitener made from ultrafiltered skim milk retentates. *J. Food Sci.* **51**: 235-236.
- Jiménez-Flores, R. and Kosikowski, F. V. (1986). Properties of Ultrafiltered skim milk retentate powders. *J. Dairy Sci.* **69**:329-339.
- Kosikowski, F. V. and Jiménez-Flores, R. (1985). Removal of penicillin-G from contaminated milk by ultrafiltration. *J. Dairy Sci.* **68**:3224-3231

### **Abstracts**

#### **ACS Semi Annual Meeting. San Francisco, CA. 2006**

- Charles Richard Cabral<sup>1</sup>, D. E. Gragson<sup>2</sup>, and Rafael Jimenez-Flores. Comparison of techniques for the formation solid-supported lipid bilayers from MFGM lipids.
- Peter Krommenhoek, Grant Gallagher, Rafael Jiménez-Flores, Derek Gragson, John Hagen. Biophysical Analysis of the Milk Fat Globule Membrane

#### **IFT Annual Meeting. Orlando, FL. 2006**

- J. YEE, R. Jimenez-Flores and H. Khalil. Characterization of Supercritical Fluid Extraction of Lipids from Grated Cheese Products
- Rafael Jiménez-Flores. The milk fat globule membrane: Recent scientific advances, biological significance and challenges for commercialization, **IFT Symposium: Dairy Ingredients - Underpinning Science, Commercial Success**

#### **ADSA Annual Meeting. Minneapolis, MN. 2006**

- A. Laubscher\*<sup>1</sup>, S. Henderson<sup>1</sup>, J. F. Medrano<sup>2</sup>, G. Rincon<sup>2</sup>, R. Jimenez-Flores<sup>1</sup>. Correlation of DGAT1 genetic variants with fat content in the Cal Poly Herd
- Iñiguez-Palomares Claudia<sup>1</sup>, Acedo-Félix Evelia<sup>1</sup>, Sharpe-John<sup>2</sup>, Jiménez-Flores Rafael. Evaluation of Adherence of *Bifidobacterium* and *Lactobacillus* Strains to Cell Membranes by Blot Analysis and Optical Tweezers
- Supanika Jinjarak<sup>1</sup>, Pierre Morin, Ammar Olabi, Rafael Jimenez-Flores. Sensory Evaluation of a Novel Ingredient Produced from Buttermilk

structure of buttermilk and of its milk fat globule membranes.  
S. Uson, C. Immoos, R. Jiménez-Flores. Verification of ED-XRF as a reliable method for determining the mineral composition of skim milk powders

***International Dairy Federation. Annual Summit. Shanghai, China. 2006***

A. Laubscher\*, S. Henderson, J. F. Medrano, G. Rincon, R. Jimenez-Flores Correlation of DGAT1 expression with fat content in the Cal Poly Herd

Jessica Yee, Hany Khalil, and Rafael Jimenez-Flores Flavor Compound Partition in Cheese Treated by Supercritical Fluid Extraction

**June 5-9, 2005, The American Society for Microbiology General Meeting Atlanta, GA**

Binding Characteristics of Lactic Acid Bacteria and Milk Fat Globule Components Using Emulsion Technology A. *Benavides, D.T. Elizondo-Bachiero, R. Jiménez-Flores*

Screening and Binding Characterization of Lactic Acid Bacteria Using Small Intestine Membrane Components from Swine *D.T. Elizondo-Bachiero, A. Benavides, R. Jiménez-Flores*

**July 24-28, 2005 ADSA/ASAS/CSAS Joint Annual Meeting Cincinnati, Ohio**

Spectrophotometry and DSC Correlate with Fatty Acid Differences in Milk Fat Crystallization Behavior  
*Lorna Wieseler Lassonde, Rafael Jimenez-Flores*

Sensory Evaluation of Sweet Cream, Whey, and Cultured Butters *S. Jinjarak, A. Olabi, R. Jiménez-Flores, R. Gonzales, and W. Lires*

The concentration of polar MFGM lipids from buttermilk using supercritical carbon dioxide *Amy Spence, Jessica Yee, Michael Qian, Rafael Jimenez*

Interactions of Whey Proteins During Heat Treatment of Oil-in-Water Emulsions Formed with Whey Protein Isolate and Hydroxylated Lecithin. *Rafaël Jiménez-Flores, Aiqian Ye, and Harjinder Singh*

**October 6-8, 2004 Congress of Food Science and Technology at the University of Puebla Puebla, Mexico**

Binding Characteristics of Probiotic Bacteria to Milk Fat Globule Membrane Components. *Jimenez-Flores, R.*

**June 20-23, 2004 New Zealand Institute of Food Science & Technology Hamilton,  
New Zealand**

Recent Advances in Membrane Research *Jimenez-Flores, R.*

**May 9-12, 2004 4th International Symposium on Recombined Milk and Milk  
Products Cancun, Mexico**

Monitoring Endospores and Endospore-Forming Bacterial Populations  
during Commercial Skim Milk Powder Production  
*Murillo, C.; Jimenez-Flores, R.; Kitts, C.*

Fractionation of Regular Buttermilk and Whey Buttermilk by Microfiltration and  
Diafiltration/Microfiltration *P. Morin<sup>1,2</sup>, A. Spence<sup>2</sup>, Y. Pouliot<sup>1</sup>, R. Jiménez-Flores<sup>2</sup>*  
<sup>1</sup>STELA Dairy research centre, Université Laval, Québec  
<sup>2</sup>Dairy Products Technology Center, California Polytechnic State University, San Luis  
Obispo

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