Yoannis Imbert-Fernandez, Ph.D.

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EDUCATION

1993-1998 **B.A.** Biochemistry**,** University of Havana, Havana, Cuba
2005-2008 **M.S.** Department of Biochemistry and Molecular Biology, University of Louisville, Louisville, KY
2005-2010 **Ph.D.** Department of Biochemistry and Molecular Biology, University of Louisville, Louisville, KY

ACADEMIC APPOINTMENTS:

2002-2005 **Laboratory Technician**, Birth Defects Center, Department of Molecular, Cellular, and Craniofacial Biology. Field of study: Biochemistry and Molecular Biology, Glycobiology, enzymology.

2005-2010 **Graduate Student (PhD. Candidate)**, Department of Biochemistry and Molecular Biology, University of Louisville, Louisville, KY.
Dissertation: The role of MUC1 splice variants in dry eye disease and inflammation.

2010-2013 **Post-Doctoral Research Associate**, Department of Medicine, Division of Medical Oncology and Hematology, University of Louisville, Louisville, KY.
Project: Targeting Breast Cancer with PFKFB3 Inhibitors

2013-2015 **Post-Doctoral Scholar**, Department of Medicine, Division of Medical Oncology and Hematology, University of Louisville, Louisville, KY.
Project: Targeting Breast Cancer with ER, CDK4/6 and PFKFB3 Inhibitors

2015-*Present* **Assistant Professor**, Department of Medicine, Division of Medical Oncology and Hematology, University of Louisville, Louisville, KY.
Project: Targeting Breast and Lung Cancer with ER, CDK4/6 and PFKFB3 Inhibitors

OTHER POSITIONS AND EMPLOYMENT

None

CERTIFICATION AND LICENSURE

None

PROFESSIONAL MEMBERSHIPS AND ACTIVITIES

2015 **Chair**, 1st Annual Twisted Pink Foundation Conference on Metastatic Breast Cancer

HONORS AND AWARDS

2010 **Graduate's Dean Citation**
2012 **Ralph Scott Fellow Basic Research Award – 3rd Place** (JGBCC Retreat)
2013 **Ralph Scott Fellow Basic Research Award – 1st Place** (JGBCC Retreat)
2014 **Ralph Scott Fellow Basic Research Award – 2nd Place** (JGBCC Retreat)

COMMITTEE ASSIGNMENTS AND ADMINISTRATIVE SERVICES

None

EDUCATIONAL ACTIVITIES

Course Teaching

2006 **Biochemistry I (4 credits)**. Teaching Assistant. University of Louisville
2011 **Anatomy and Physiology I Laboratory (4 credits**). Biology Depatment. Bellarmine University
2012 **Principles of Biology Laboratory (4 credits).** Biology Depatment. Bellarmine University
2013 **Anatomy and Physiology I (6 credits)**. Nursing Program. Sullivan University
2014 **Gross Human Anatomy (4 credits)**. Physician Assistant Program. Sullivan University
2014 **Medical Microbiology (1.5 credits)**. Physician Assistant Program. Sullivan University
2014 **Genetics and Disease (1.5 credits)**. Physician Assistant Program. Sullivan University
2015 **Physiology and Pathophysiology III (4 credits).** Physician Assistant Program. Sullivan University

Research/Laboratory Teaching

Undergraduates
2015-*present* Andrew Bratton, University of Louisville

Graduate Students
2014-*present* Robert Spaulding (MD-Ph.D), University of Louisville

Medical Students

2014 Jordan Noe (MD-Ph.D), University of Louisville
2014-*present* Govind Warrier, University of Louisville

Post-Doctoral Fellows

2014-*present* Nadijka Lypova, Ph.D., University of Louisville

Internal Medicine Residents

2011-*present* Alan Kerr, Ph.D., University of Louisville

Hematology/Oncology Fellows

2015-*present* Tezo Karaden, M.B.B.S., University of Louisville

CLINICAL ACTIVITIES

None

GRANTS AND CONTRACTS

Past Support

1. NIH Kirschstein-NRSA Minority Predoctoral Fellowship

Title:	**The Role of MUC1 and Estrogen Receptor in Dry Eye Disease**
Role:	*Principal Investigator* (100% effort)
Award number:	F31EY017275-01A1
Period of Support:	2007-2010
Total Award:	$105,928

This grant funded my graduate studies and training to become an independent investigator

Current Support

1. DOD CDMRP Breast Cancer Post-Doctoral Fellowship (Imbert-Fernandez)

Title:	**Regulation of Glucose Utilization by Estradiol In Breast Cancer**
Role:	*Principal Investigator (100%)*
Award number:	W81XWH-13-1-0208
Period of Support:	7/01/2013-6/30/2016
Total Award:	$447,226

This grant proposal is to fund my training to become a breast cancer researcher.

2. Twisted Pink Foundation for Metastatic Breast Cancer

Title:	**Triple Combinatorial Therapy using 6-Phosphofructo-2-Kinase Inhibitors with ER and CDK4/6 Inhibitors in Metastatic Breast Cancer**
Role:	*Principal Investigator (Cost Share)*
Period of Support:	5/01/2015-4/30/2016
Total Award:	$100,000

This grant funds an investigation into the potential synergy of PFKFB3 inhibitors, estrogen receptor inhibitors and CDK4/6 inhibitors

Pending Support:

1. NIH (NCI) R01 (PI: Imbert-Fernandez)

Title:	**Combining 6-Phosphofructo-2-Kinase Inhibitors with ER and CDK4/6 Inhibitors in Breast Cancer**
Role:	PI (30%)
Period of Support:	2/01/2016-1/31/2021
Proposed Total Award:	$1.8M

This grant proposal which is currently in preparation will dissect the interactions between PFKFB3, CDK4/6 cell cycle signaling and estrogen receptor signaling

PATENTS

None

EDITORIAL WORK

None

ABSTRACTS AND PRESENTATIONS

Oral Presentations

2010 **The Role of MUC1 Splice Variants in Dry Eye and Inflammation.** Dissertation Defense. Department of Biochemistry and Molecular Biology. University of Louisville

2012 **"Estradiol: How sweet it is"** Invited speaker at the Molecular Targets Group at the James Graham Brown Cancer Center, University of Louisville.

2012 **"Fructose-2,6-Bisphosphate- An Essential Effector Molecule of Estradiol-Induced Glucose Metabolism and Growth"** Department of Biochemistry and Molecular Biology, University of Louisville

2015 **"Regulation of 6-Phosphofructo-2-Kinase (PFKFB3) by Estradiol and Implications for the Treatment of ER+ Breast Cancer"** Invited Speaker at the Brown Cancer Center Oncology/Hematology Grand Rounds, University of Louisville.

Poster Presentations

1. **Imbert**, Y., Darling, D.S., Jumblatt, M.M., Foulks, G.N., Couzin, E.G., Steele, P.S. and Young, W.W., Jr. Mucin splice variants in ocular surface tissues. (Abstract 75). Glycobiology 15, 1220, 2005.
2. **Imbert**, Y., Darling, D.S., Jumblatt, M.M., Foulks, G.N., Couzin, E.G., Steele, P.S. and Young, W.W., Jr. Mucin splice variants in the human ocular surface: possible differences between dry eye patients and normal controls. (Abstract GRD24) Research! Louisville, 2005.
3. **Imbert**, Y., Darling, D.S., Jumblatt, M.M., Foulks, G.N., Couzin, E.G., Steele, P.S. and Young, W.W., Jr. Mucin splice variants in the human ocular surface: possible differences between dry eye patients and normal controls. (Abstract 5596). ARVO meeting, IOVS, 2006.
4. **Imbert**, Y., G.N. Foulks, M.D. Brennan, M.M. Jumblatt, G. John, H.A. Shah, C. Newton, and W.W. Young, Jr. MUC1 gene polymorphism in dry eye patients. (Abstract 6). TFOS meeting, 2007.
5. **Imbert-Fernandez**, Y., and Klinge, C.M. MUC1 splice variants differentially regulates inflammatory responses in transfected COS-7 cells. (Abstract 753). FASEB meeting, 2010.
6. Radde, B.N., **Imbert-Fernandez**, Y. and Klinge, C.M. MUC1-Estrogen Receptor interaction in lung adenocarcinoma cells (Abstract RS-104). Research!Louisville, 2010.
7. **Imbert-Fernandez** Y., Clem, B., O'Neal, J., Clem, A. and Chesney, J. Estradiol stimulates 6-phosphofructo-2-kinase (PFKFB3) expression and glycolysis by breast cancer cells (Abstract PRF-45). Research!Louisville, 2011.
8. Spaulding, R., **Imbert-Fernandez,** Y., Telang, S., Clem, B.F., Trent, J.O., Chesney, J. Discovery of a novel small molecule antagonist of cytosolic aspartate aminotransferase that causes decreased transformed cell growth in vitro (Abstract MED-82). Research!Louisville, 2012.
9. **Imbert-Fernandez** Y., Clem, B., O'Neal, J., Clem, A. and Chesney, J. Stimulation of glucose metabolism by estradiol is mediated by 6-phosphofructo-2-kinase (PFKFB3) (Abstract 51). 11th Annual Retreat, Brown cancer Research, 2012.
10. **Imbert-Fernandez** Y., Clem, B., O'Neal, J., Clem, A. and Chesney, J. Stimulation of glucose metabolism by estradiol is mediated by 6-phosphofructo-2-kinase (PFKFB3) (Abstract X4 2011). Tumor metabolism meeting. Keystone symposia, 2013.
11. **Imbert-Fernandez** Y., Clem, B., O'Neal, J., Clem, A. and Chesney, J. Estradiol stimulates glucose metabolism via 6-phosphofructo-2-kinase (PFKFB3). 12th Annual Retreat, Brown cancer Research, 2013.

12. **Imbert-Fernandez** Y., Clem, B., O'Neal, J., Clem, A. and Chesney, J. Simultaneous inhibition of the estrogen rece and 6-phosphofructo-2-kinase (PFKFB3) for the treatment of ER+ breast cance (Abstract P29) Metabolism, diet and disease, 2014.
13. **Imbert-Fernandez** Y., Clem, B., Clem, A. and Chesney, J. Estradiol stimulates glucose metabolism via 6-phosphofructo-2-kinase (PFKFB3) (Abstract 40). 13th Annual Retreat, Brown cancer Research, 2014.
14. **Imbert-Fernandez** Y., Clem, B., Tapolsky, G., and Chesney, J. Regulation of 6-phosphofructo-2-kinase (PFKFB3) by estradiol and implications for the treatment of ER+ metastatic breast cancer (Abstract A84). AACR, Metabolism and Cancer, 2015

PUBLICATIONS

1. **Imbert**, Y., Darling, D.S., Jumblatt, M.M., Foulks, G.N., Couzin, E.G., Steele, P.S., and Young, W.W., Jr. MUC1 splice variants in human ocular surface tissues: possible differences between dry eye patients and normal controls. Exp. Eye Res. 2006 Sep;83(3):493-501. Epub 2006 Apr 21. PMID: 16631167

2. Jumblatt, M.M., **Imbert**, Y., Young, W.W. Jr., Foulks, G.N., Steele, P.S., and Demuth, D.R. Glycoprotein 340 in normal human ocular surface tissues and tear film. Infect Immun. 2006 Jul;74(7):4058-63. PMID: 16790779

3. **Imbert**, Y., Jumblatt, M.M., Foulks, G.N., Couzin, E.G., Steele, P.S., Young, W.W. Jr. Expression in human ocular surface tissues of the GalNAc-transferases that initiate mucin-type O-glycosylation. Cornea. 2006 Dec;25(10):1193-9. PMID: 17172897

4. **Imbert**, Y., Foulks, G.N., Brennan, M.D., Jumblatt, M.M., John, G., Shah, H.A., Newton, C., Pouranfar, F., Young, W.W., Jr. MUC1 and estrogen receptor alpha gene polymorphisms in dry eye patients. Exp Eye Res. 2009 Mar;88(3):334-8. Epub 2008 Jun 20. PMID: 18619437

5. Schultz, D.J., Wickramasinghe, N.S., Ivanova, M.M., Isaacs, S.M., Dougherty, S.M., **Imbert-Fernandez**, Y., Cunningham, A.R., Chen, C., Klinge, C.M. Anacardic acid inhibits estrogen receptor alpha-DNA binding and reduces target gene transcription and breast cancer cell proliferation. Mol Cancer Ther. 2010 Mar;9(3):594-605. Epub 2010 Mar 2. PMID: 20197399

6. **Imbert-Fernandez**, Y., Radde, B.N., Teng, Y., Young, W.W., Jr., Hu, C., Klinge, C.M. MUC1/A and MUC1/B splice variants differentially regulate inflammatory cytokine expression. Exp Eye Res. 2011 Nov;10(11):2062-71. Epub 2011 Aug 16. PMID: 21862684

7. Klinge, C.M., Radde, B.N., **Imbert-Fernandez**, Y., Teng, Y., Ivanova, M.M., Abner, S.M. and Martin, A.L. Targeting the intracellular MUC1 C-terminal domain inhibits proliferation and estrogen receptor transcriptional activity in lung adenocarcinoma cells. Mol Cancer Ther. 2011 Nov;93(5):649-57. Epub 2011 Aug 23. PMID: 21854773

8. Telang, S., Nelson, K.K., Siow, D.L., Yalcin, A., Thornburg, J.M., **Imbert-Fernandez**, Y., Klarer, A.C., Farghaly, H., Clem, B.F., Eaton, J.W., Chesney, J. Cytochrome c oxidase is activated by the oncoprotein Ras and is required for A549 lung adenocarcinoma growth. Mol Cancer. 2012 Aug 23;11(1):60. Epub ahead of print. PMID: 22917272

9. Clem, B.F, O'Neal, J., Tapolsky, G., Clem, A.L., **Imbert-Fernandez, Y.**, Kerr, D.A. 2nd, Klarer, A.C, Redman, R., Miller, D.M., Trent, J.O., Telang, S., Chesney, J. Targeting 6-Phosphofructo-2-Kinase (PFKFB3) as a Therapeutic Strategy against Cancer. Mol Cancer Ther. 2013 Aug;12(8):1461-70.. Epub 2013 May 14.

10. Klarer, A.C., O'Neal, J., **Imbert-Fernandez,** Y., Clem, A., Ellis, S.R., Clark, J., Clem, B., Chesney, J., Telang, S. Inhibition of 6-phosphofructo-2-kinase (PFKFB3) induces autophagy as a survival mechanism. Cancer Metab. 2014 Jan 23;2(1):2. PMID: 24451478

11. **Imbert-Fernandez,** Y., Clem, B.F., O'Neal, J., Kerr, D.A., Spaulding, R., Lanceta, L., Clem, A.L., Telang, S., Chesney J. Estradiol stimulates glucose metabolism via 6-phosphofructo-2-kinase (PFKFB3). JBC. 2014 Mar 28;289(13)9440-8. PMID:24515104

12. Yalcin, A., Clem, B.F., **Imbert-Fernandez, Y.**, Ozcan, S.C., Peker, S., O'Neal, J., Klarer, A.C, Clem, A.L., Telang, S., Chesney, J. 6-phosphofructo-2-kinase (PFKFB3) promotes cell cycle progression and suppresses apoptosis via Cdk1-mediated phosphorylatin of p27. Cell Death Disease. 2014 July 17. PMID: 25032860

13. Chesney, J., Clark, J., Klarer, A.C., **Imbert-Fernandez, Y.,** Lane, A.N., Telang, S. Fructose-2,6-bisphosphate synthesis by 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 4 (PFKFB4) is required for the glyclolytic response to hypoxia and tumor growth. Oncotarget. 2014 July 13 PMID:25115398. Epub ahead of print.

14. **Imbert-Fernandez, Y.,** Tapolsky, G., Clem, B.F., J., Spaulding, R.L., Warrier, G., Clem, A.L., Telang, S., Chesney J. Simultaneous targeting of 6-phosphofructo-2-kinase (PFKFB3) and estrogen receptor in breast cancer. *Breast Cancer Research*. *Manuscript in preparation.*