CURRICULUM VITAE
SYED ABDUL LATIF, PH.D

PERSONAL INFORMATION:

Born - Hyderabad, India
Citizenship - U.S.
Marital Status - Married, three children
Business Address - The Miriam Hospital/Lifespan
Dept. of Pathology and Laboratory Medicine
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Providence, RI 02906
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EDUCATION:

B.Sc. (Honors) in Biochemistry, University of Karachi - 1965
M.Sc. in Biochemistry, University of Karachi, Pakistan - 1966
M.S. in Biochemistry, University of Connecticut - 1969
Ph.D. in Biochemistry, University of Rhode Island - l976

MILITARY SERVICE:

None

PROFESSIONAL LICENSE AND CERTIFICATION:

National Registry of Clinical Chemists (Certified l984)
State of Rhode Island, Clinical Scientist License #607

ACADEMIC APPOINTMENTS:

Professor of Pathology (Clinical), Brown University, Providence, RI
(2008- Present)

Associate Professor of Pathology (Clinical), Brown University, Providence, RI
(2002-2008)

Associate Professor of Pathology (Research), Brown University, Providence, RI
(1991-2002)

Assistant Professor of Pathology (Research), Brown University (1984-1991)

Adjunct Clinical Assistant Professor of Medical Technology, University of Rhode Island, Kingston, RI (l983-Present)

Clinical Assistant Professor of Pathology, Brown University (1977-1984)
Teaching Faculty of Brismet (RI School of Medical Technology) (1975-Present)

Teaching Assistant, University of Rhode Island, Kingston, RI (l972-1974)

Teaching Assistant, University of Connecticut, Storrs, Connecticut (1966-1969)

HOSPITAL APPOINTMENTS:

Scientific Director (Interim) of Biochemistry, Lifespan AMC Pathology Laboratories, RI Hospital and The Miriam Hospital, (July, 2014 –July, 2016)

Associate Director of Clinical Biochemistry, Lifespan AMC Pathology Laboratories, RI Hospital and The Miriam Hospital, (1997-Present)

Assistant Biochemist, The Miriam Hospital, Department of Pathology and Laboratory Medicine, Providence, RI (1974-1997)

Supervisor, Biochemistry Laboratory, (1988-1995)

Supervisor Special Chemistry and Immunoassay Laboratories, The Miriam Hospital, Providence, RI (l974-1997)

HOSPITAL COMMITTEES:

Safety Committee, Department of Pathology and Laboratory Medicine, The Miriam Hospital

MEMBERSHIPS IN SOCIETIES:

The Endocrine Society
American Association of Clinical Chemistry

PUBLICATIONS:

1. Latif, S.A., Zain, B.K., and Zain-ul-Abedin, M. l967. Intestinal transport of sugars in a lizard during hibernation and activity. Comp. Biochem. and Physiol. 23:121.

2. Purvis, J.L., Canick, J.A., Rosenbaum, J.H. Hologgitas, J., and Latif, S.A. l973. Control of cytochrome P-450 in rat testis mitochondria by human chorionic gonadotrophin. Arch. Biochem. and Biophys. 159:32-38.

3. Purvis, J.L., Canick, J.A., Latif, S.A., Rosenbaum, H.J., and Menard, R.H. l973. Lifetime of microsomal cytochrome P-450 and steroidogenic enzymes in rat

testis as influenced by human chorionic gonadotrophin. Arch. Biochem. and Biophys. 159:39-49.

4. Menard, R.H., Purvis, J.L., and Latif, S.A. l975. The intra-testicular localization of cytochrome P-450 dependent enzymes in rat testis. Endocrinology 97:1587.

5. Latif, S.A. and Purvis, J.L. l976. Specificity of the response of cytochrome P-450 and cytochrome P-450 dependent enzymes to pituitary hormones LH and FSH. Manuscript II in Ph.D. Thesis, URI, Kingston, RI.

6. Latif, S.A. and Purvis, J.L. l976. 17β-hydroxysteroid dehydrogenase in rat testis; Activation by testosterone, intratesticular localization and hormonal control. Manuscript III in Ph.D. Thesis, URI, Kingston, RI.

7. Morris, D.J., DeConti, G.A., and Latif, S.A. 1979. The mineralocorticoid properties of reduced metabolites of aldosterone. J. Endocrinology 81:111P-112P.

8. Latif, S.A., McDermott, M.J., and Morris, D.J. 1981. The role of cytochrome P-450 in the synthesis of polar metabolites of aldosterone by microsomes of male rat liver. Steroids 38:307-319.

9. Morris, D.J., McDermott, M.J., Latif, S.A., Keating, A., and Kenyon, C.J. 1982. The metabolism of aldosterone in target tissues. J. Steroid Biochem. 15:473-477.

10. Morris, D.J., Kenyon, C.J., Latif, S.A., McDermott, M., and Goodfriend, T. 1983. The possible biological significance of aldosterone metabolites. Hypertension (Suppl. I):I35-I40.

11. Kenyon, C.J., Brem, A.S., McDermott, M.J., DeConti, G.A., Latif, S.A., and Morris, D.J. 1983. Antinatriuretic and kaliuretic activities of the reduced derivatives of aldosterone. Endocrinology 112:1825-1856.

12. McDermott, M., Latif, S.A., and Morris, D.J. 1983. The metabolism of aldosterone in kidney. J. Steroid Biochem. 19:1205-1211.

13. Latif, S.A., McDermott, M.J., and Morris, D.J. 1983. The effects of adrenal and gonadal steroids on the in vitro synthesis of aldosterone metabolites by microsomes and cytosol of male rat liver. Steroids 42(3):283-297.

14. McDermott, M.J., Freiberger, M., Latif, S.A., and Morris, D.J. 1985. The synthesis of reduced metabolites of aldsosterone by subcellular fractions of rat kidney: Effects of antimineralocorticoids. J. Steroid Biochem. 23:503-509.

15. Morris, D.J., McDermott, M.J., Freiberger, M., Latif, S.A., Pacholski, M., and Brem, A. 1986. Effects of antimineralocorticoids on synthesis of aldosterone metabolites in target tissues. J. Steroid Biochem. 24:341-344.

16. Latif, S.A., Camara, P., Rosen, M.P., and Morris, D.J. 1987. Enzymatic synthesis of ^{3}H-labeled Ring-A-reduced metabolites of aldosterone and their separation by high pressure liquid chromatography. Steroids 49:589-600.

17. Gorsline, J., Latif, S.A., and Morris, D.J. 1988. Changes in 5α-and 5β-reductase pathways of aldosterone metabolism by dietary sodium. Hypertension 1:272-275.

18. Kirk, D.N., Burke, P.J., Toms, H.C., Latif, S.A., and Morris, D.J. 1989. 18-Substituted steroids - Part 15. 6β-hydroxylation of aldosterone by rat liver. Steroids 54:169-184.

19. Kirk, D.N., Miller, B.W., Cooley, G., Latif, S.A., and Morris, D.J. 1989. 18-Substituted steroids Part 16. Synthesis of 6β-hydroxy and 6α-hydroxy-aldosterone and their 17α-isomers. J. Chem. Res. 1274-1289.

20. Latif, S.A., Morris, D.J., Wei, L., Kirk, D.N., Burke, P.J., Toms, H.C., and Shackleton, C.H.L. 1989. 18-Substituted steroids - Part 17. 2α-hydroxylated liver metabolites of aldosterone identified by high field 'H NMR spectroscopy. J. Steroid Biochem. 33:1119-1125.

21. Latif, S.A., Conca, T., and Morris. D.J. 1990. The effects of glycyrrhetinic acid on 5α- and 5ß-pathways of metabolism of aldosterone. Steroids 55:52-58.

22. Morris, D.J., Davis, E., and Latif, S.A. 1990. Licorice, tobacco chewing, and hypertension. New England J. Med. 322:849.

23. Morris, D.J., Latif, S.A., Conca, T., Watlington, C., Kirk, D.N., and Shackleton, C.H.L. 1990. 6β-Hydroxylation of aldosterone by the toad kidney A6 cell line. Steroids 55:482-487.

24. Weinstein, B.I., Kandalaft, N., Ritch, R., Camras, C.B., Morris, D.J., Latif, S.A., Vecsei, P., Vittek, J., Gordon, G.G., and Southren, A.L. 1991. 5β-Dihydrocortisol in human aqueous humor and metabolism of cortisol by human lenses in vitro. Invest. Opthalmol. & Vis. Sci. 32:2130-2135.

25. Morris, D.J., Semafuko, W.E.B., Latif, S.A., Vogel, B., Grimes, C., and Sheff, M.F. 1992. Detection of glycyrrhetinic acid-like factors (GALFs) in human urine. Hypertension 20:356-360.

26. Latif, S.A., Semafuko, W.E.B., and Morris, D.J. 1992. Effects of carbenoxolone (CS) administered acutely to adrenalectomized rats (in vivo) on renal and hepatic handling of corticosterone by 11β-hydroxysteroid dehydrogenase. Steroids 57:494-501.

27. Kirk, D.N., Schroder, M.H., Latif, S.A., Souness, G.W., and Morris, D.J. 1993. 18-Substituted steroids. Part 18. Chemical synthesis and mineralocorticoid activity of 2α- and 2β-hydroxyaldosterone. Steroids 58:59-63.

28. Brem, A.S., Matheson, K.L., Latif, S., and Morris, D.J. 1993. Activity of 11β-hydroxysteroid dehydrogenase in toad bladder: effects of 11-dehydrocorticosterone. Amer. J. Physiol. 264:F854-F858.

29. Semafuko, W.E.B., Sheff, M.F., Grimes, C., Latif, S.A., Sadaniantz, A., Levinson, P., and Morris, D.J. 1993. Inhibitors of 11β-hydroxysteroid dehydrogenase and 5β-steroid reductase (GALFs) in urine from patients with congestive heart failure. Annals of Clin. Lab. Sci. 23:456-461.

30. Latif, S.A., Hartman, L.R., Souness, G.W., and Morris, D.J. 1994. Possible endogenous regulators of steroid inactivating enzymes and glucocorticoid-induced Na+ retention. Steroids 59:352-356.

31. Souness, G.W., Latif, S.A., Laurenzo, J.L., and Morris, D.J. 1995. 11α- and 11β-hydroxyprogesterone, potent inhibitors of 11β-hydroxysteroid dehydrogenase (isoforms 1 and 2), confer marked mineralocorticoid activity on corticosterone in the ADX rat. Endocrinology 136:1809-1812.

32. Latif, S.A., Sheff, M.F., Ribeiro, C.E., and Morris, D.J. 1997. Selective inhibition of sheep kidney 11ß-hydroxysteroid dehydrogenase isoform 2 activity by 5α-reduced (but not 5ß-) derivatives of adrenocorticosteroids. Steroids 62:230-237.

33. Lo, Y.H., Sheff, M.F., Latif, S.A., Ribeiro, C., Silver, H., and Morris, D.J. 1997. Kidney 11β-HSD2 is inhibited by glycyrrhettinic acid-like factors (GALFs) in human urine. Hypertension, 29(11):500-505.

34. Franco-Saenz, R., Tokita, Y., Latif, S.A., and Morris, D.J. 1997. 11β-Hydroxysteroid dehydrogenase in the Dahl rat. Am J Hypertension 10. 1004-1009.

35. Morris, D.J., Latif, S.A., Myles, K., Rokaw, M.D., and Johnson, N.P. 1998. A second enzyme protecting mineralocorticoid receptors from glucocorticoid occupancy. Am. J. Physiol. 274, 1245-1252.

36. Wang, G-M, Ge, R-S, Latif, S.A, Morris, D.J, and Hardy, M.P. 2002. Expression 11β-hydroxylase in Rat Leydig cells. Endocrinol. 143, 621-626.

37. Morris, D.J, Souness, G.W, Latif, S.A, Hardy, M.P, and Brem, A.S. 2004. Effects of Chenodeoxycholic Acid on 11β-hydroxysteroid dehydrogenase in Various Target Tissues. Metab. 53, 811-816.

38. Ge, R-S, Dong, Q., Niu, E-m., Sottas, C.M., Hardy, D.O., Catterall, J.F., Latif, S.A, Morris, D.J, and Hardy, M.P. 2005. 11β-hydroxysteroid Dehydrogenase 2 in Rat Leydig Cells: Its Role in Blunting Glucocorticoid Action at Physiological Levels of Substrate. Endocrinol. 146, 2657-2664

39. Ge, R-S, Dong, Q, Sottas, C.H, Latif, S.A, Morris, D.J, and Hardy, M.P. 2005. Stimulation of testosterone production in Leydig cells by aldosterone is mineralocorticoid receptor mediated. Mol.Cell. Endocrinol. 243, 35-42.

40. Latif, S.A, Pardo, H.A, Hardy, M.P, and Morris, D.J. 2005. Endogenous selective inhibitors of 11β-OH-Steroid dehydrogenase isoforms 1 and 2 of adrenal origin. Mol.Cell. Endocrinol. 243, 43-50.

41. Morris, D.J, Latif, S.A, Hardy, M.P, and Brem, A.S. 2007. Endogenous inhibitors (GALFs) of 11β-hydroxysteroid dehydrogenase isoforms 1 and 2: Derivatives of adrenally produced corticosterone and cortisol. J. Steroid Biochem. and Mol. Biol.
104, 161-168.

42. Morris, D.J., Latif, S.A, Lo, Y.H, Abrampah, K, Brem, A.S, Lichtfield, W.R. and Williams, G.W. 2008. Correlation of glycyrrhetinic acid-like factors (kidney-11β-HSD2 GALFs) with urinary free cortisol and plasma renin activity in essential hypertension. J Am Soc Hypertension. 2, 286-293.

43. Hu GX, Lian QQ, Lin H, Latif SA, Morris DJ, Hardy MP, Ge RS. 2008. Rapid mechanisms of glucocorticoid signaling in the Leydig cell. Steroids. 73, 1018-24.

44. Gong R, Latif S, Morris DJ, Brem AS. 2008. Co-localization of glucocorticoid metabolizing and prostaglandin synthesizing enzymes in rat kidney and liver. Life Sci. 83, 725-31.

45. Morris DJ, Latif SA, Brem AS. 2009. Interactions of mineralocorticoids and glucocorticoids in epithelial target tissues revisited. Steroids. 74, 1-6.

46. Latif SA, Shen M, Ge R-S, Sottas CM, Hardy MP, Morris DJ. 2011. Role of 11β-OH– C_{19} and C_{21} Steroids in the Coupling of 11β- HSD1 and 17β-HSD3 in Regulation of Testosterone Biosynthesis in Rat Leydig Cells. Steroids. 76, 682–689.

47. Morris DJ, Latif SA, Brem AS. 2014. An alternative explanation of hypertension associated with 17α-hydroxylase deficiency syndrome. Steroids 79, 44–48.

48. Xingwang Li, Guoxin Hu, Xiaoheng Li, Yi-Yan Wang, Yuan-Yuan Hu, Hongyu Zhou, Syed A. Latif, David J. Morris, Yanhui Chu, Zhiqiang Zheng, Ren-Shan Ge, 2015. Metabolic Coupling Determines the Activity:Comparison of 11β-Hydroxysteroid Dehydrogenase1 and Its Coupling between
Liver Parenchymal Cells and Testicular Leydig Cells. PLoS ONE 10(11): e0141767. doi:10.1371/journal, November 3, 2015.

PRESENTATION AND ABSTRACTS:

1. Purvis, J.L., Latif, S.A., Rosenbaum, J.J., and Hologgitas, J. l973. On the control of cytochrome P-450 dependent enzymes in mature rat testis by hCG. FASEB. Abstract l452.

2. May, J., Ng, S., Jimenez, U., Younkin, B., Latif, S., and Purvis, J. l975. 17β-hydroxysteroid dehydrogenases in rat testis: Intratesticular localization activation by testosterone, and hormone control. FASEB, Abstract 575.

3. Latif, S.A., Tsai, R., Reinhold, V., and Morris, D.J. 1978. Isolation and partial identification of several polar metabolites of aldosterone synthesized in the liver of male rats. 5th Int. Cong. on Hormonal Steroids, October, New Delhi, India, J. Steroid Biochem. 9:821.

4. Latif, S.A., McEnany, T.E., Reinhold, V., and Morris, D.J. 1980. Isolation and partial identification of several new polar metabolites of aldosterone synthesized by male rat, dog, and human liver. Endocrinology 491:197.

5. Morris, D.J., McDermott, M.J. Latif, S.A., Keating, A., and Kenyon, C.J. 1981. The metabolism of aldosterone in target tissues. 5th Int. Symp. of J. Steroid Biochem., July, Puerto Vallarata, Mexico.

6. Kenyon, C.J., McDermott, M.J., DeConti, G.A., Latif, S.A., and Morris, D.J. 1982. The antinatriuretic and kaliuretic activities of the reduced metabolites of aldosterone. Ann. Mtg. Endocrine Society, June, San Francisco, CA.

7. Morris, D.J., Kenyon, C.J., Latif, S.A., McDermott, M., and Goodfriend, T. 1982. The biological significance of aldosterone metabolites. AHA Council for High Blood Pressure Research 36th Ann. Conf., October, Cleveland, OH.

8. McDermott, M.J., Freiberger, M.A., Latif, S.A., and Morris, D.J. 1983. The effects of antimineralocorticoids on synthesis of 5α-reduced metabolites of aldosterone in rat kidney nuclei. Ann. Mtg. Endocrine Society, June, San Antonio, TX.

9. Morris, D.J., McDermott, M.J., Freiberger, M., Latif, S.A., Pacholski, M., and Brem, A. 1985. Effects of antimineralocorticoids on synthesis of aldosterone metabolites in target tissues. 76th Int. Symp. J. Steroid Biochem. June, Seefeld, Austria.

10. Latif, S.A., Gorsline, J., and Morris, D.J. 1986. Differences in urinary metabolites of aldosterone in SHR and WKY rats. 11th Mtg. Inter. Soc. on Hypertension, September, Heidelberg/Mannheim, West Germany.

11. Gorsline, J., Latif, S.A., and Morris, D.J. 1987. Changes in 5α- and 5β-pathways of aldosterone metabolties by dietary sodium. 2nd Ann. Mtg. Amer. Soc. of

Hypertension, May, New York.

12. Latif, S.A. and Morris, D.J. 1989. Effects of glycyrrhetinic acid (GA) on 5α- and 5β-reductase pathways of metabolism of aldosterone (ALDO) Abstract 1242. 4th Ann. Mtg. of Amer. Soc. of Hypertension, May, New York.

13. Latif, S.A., Conca, T.J., and Morris, D.J. 1989. Effect of glycyrrhetenic acid (GA) on 5α- and 5β-reductase pathways of metabolism of aldosterone (ALDO). Ann Mtg. Endocrine Society, June, Seattle, Washington.

14. Latif, S.A., Semafuko, W.E.B., and Morris, D.J. 1991. Does carbenoxolone (CS) when administered in vivo inhibit renal handling corticosterone (B) by 11β-hydroxysteroid dehydrogenase (11β-OHSD) in adrenalectomized (ADX) rats. Ann. Mtg. Endocrine Society, June, Washington, DC.

15. Latif, S.A., Semafuko, W.E.B., Souness, G.W., and Morris, D.J. 1992. Acute glycyrrhizin (GI) treatment inhibits hepatic but not renal 11β-hydroxy-steroid dehydrogenase (11β-OHSD) and yet confers mineralocorticoid (MC)-like activity upon corticosterone (B) in adrenaletomized (ADX) male rats. Ann. Mtg. Endocrine Society. June, San Antonio, TX.

16. Morris, D.J., Semafuko, W.E.B., Sheff, M.F., Grimes, C., Latif, S.A., Levinson, P., Waler, B.R., and Edwards, C.R.W. 1992. Measurement of endogenous glycyrrhetinic acid-like factors in urine from patients with essential hypertension. Ann. Mtg. of AHA Council for High Blood Pressure Research. Cleveland, Ohio.

17. Latif, S.A., Laurenzo, J., and Morris, D.J. 1994. Selective inhibition of 11β-OHSD and 5β-steroid reductase by 5α- and 5β- Ring-A reduced metabolites of fasciculata and glomerulosa steroid hormones. TX Int. Congress on hormonal steroids, September, Dallas, TX.

18. Latif, S.A., Sheff, M.F., Ribeiro, C.E., and Morris, D.J. 1996. Selective inhibition of 11β-hydroxysteroid dehydrogenase (11β-HSD) isoform 2 from sheep kidney is selectively inhibited by 5α-metabolites (but not 5β-metabolites) of adrenal cortex. 10th Internat. Congress of Endocrinology, San Francisco, CA.

19. Morris, D.J., Latif, S.A., Sheff, M.F., Abrampah, K., Litchfield, W.R., Williams, G.H. 1998. Urinary Levels of Kidney 11β(HSD2)-GALFs in Patients with Essential Hypertension Correlate with Plasma Renin Activity (PRA). 80th Ann. Mtg. Endocrine Society, New Orleans, LA.

20. Wang, G–M, Latif, S.A. Morris,D.J, and Hardy, M.P. Leydig Cells express 11β-hydroxylase message and 11β-hydroxlated androgens inhibit 11β-HSD1 enzymatic activity. International Symposium of Endocrinology, Melbourne , Australia, September, 2000.

21. Syed A Latif, Mathew P Hardy, Renshan Ge, David J Morris[1].2003.

Regulation of 11β-Hydroxysteroid Dehydrogenase (11β-HSD1) in Rat Leydig Cells by Specific Derivatives of Steroids Involved in the Androgen Synthetic Pathway. 85th Ann. Mtg. Endocrine Society. June, Philadelphia, PA.

22. Syed A Latif, Mathew P Hardy, Andrew Brem, David J Morris. 2004. Endogenous Selective Inhibitors of 11β-Hydroxysteroid Dehydrogenase Isoforms1 and 2 of Adrenal Origin. 86th Ann. Mtg. Endocrine Society, New Orleans, LA.

23. Ge, R., Sottas, C. M., Latif, S. A., Morris, D.J., Hardy, M.P. 2005. Coupling between Type1 11β-Hydroxysteroid Dehydrogenase and Enzymes of Testosterone Synthesis in Rat Leydig Cells. 87th Ann. Mtg. Endocrine Society, San Diego, CA

24. Morris, D.J, Latif, S.A, Hardy, M.P, and Brem, A.S. 2006. Endogenous inhibitors (GALFs) of 11β-hydroxysteroid dehydrogenase isoforms 1 and 2: Derivatives of adrenally produced corticosterone and cortisol. 17th International Symposium of the Journal of Steroid Biochemistry and Molecular Biology. Seefeld (Tyrol), AUSTRIA

25. Latif, S.A., Ge, R., Sottas, C.M., Hardy, M.P., Morris, D.J., 2007. Role of Endogenous C_{19} and C_{21} Steroid Derivatives in the Coupling of 11b -Hydroxysteroid Dehydrogenase (11b -HSD1) and Enzymes of Testosterone Biosynthesis in Rat Leydig Cells. 89Th Annual Mtg. Endocrine Society, Toronto, ON, Canada

26. Brem AS, Gong R, Latif SA, and Morris DJ. 2008. COX-2 Co-Localizes and Functionally Interacts with 11ß-Hydroxysteroid Dehydrogenase– 1 (11ß-HSD1) in the Kidney.

27. Latif SA, Ge R, Sottas CM, Shen M, Morris DJ. 2010. 17β-Hydroxysteroid dehydrogenase 3 (17β-HSD3), a Regulator of 11β-hydroxysteroid dehydrogenase 1 (11β-HSD1) Activity in Rat Leydig Cell. 92nd Ann. Mtg. Endocrine Society, San Diego, CA.

28. Latif SA, R-S Ge, and Morris DJ. 2011.Differential inhibition of 11β-HSD1 dehydrogenase by 5β-Ring-A-Reduced metabolites of 11-desoxy-steroid Hormones. 93rd Ann. Mtg, Endocrine Society. Boston MA.

GRANTS:

1. NIH Grant DK 21404, 1987-89, $198,317. "Regulation of Metabolism and Action of Aldosterone." (Co-Investigator)

2. NIH Grant DK 21404, 1990-95, $662,066. "Regulation of Metabolism and Action of

Aldosterone". (Co-Investigator)

3. American Heart Association, 1990-91, $25,000. "Peripheral Role of Adrenal Steroids and Licorice in Regulation of AII Vascular Receptors in Hypertension". (Principle Investigator)

4. NIH Grant HL529721 1994-97, $394,251. "Novel Endogenous Regulators of Sodium and Hypertension." (Co-Investigator)

Patents:

Lahive Ref. No.	Patent / Application No.	Title	Inventors	Status
DMI-001CPACN	6,180,762 09/476,851	Glycyrrhetinic-Acid-Like Factor	David J. Morris Syed Abdul Latif	Granted
DMI-001CPC2 DMI-001CPA	6,010,721 08/729,311	Glycyrrhetinic-Acid-Like Factor	David J. Morris Syed Abdul Latif	Granted
MHI-002	10/835,890	Selective testicular 11beta-HSD inhibitors and methods of use thereof	David J. Morris Syed Abdul Latif Matthew Hardy	Pending
MHI-002CA	Canadian Patent Appln. No. 2524165	Selective testicular 11beta-HSD inhibitors and methods of use thereof	David J. Morris Syed Abdul Latif Matthew Hardy	Pending
MHI-002EP	European Patent Appln. No. 04760450.9	Selective testicular 11beta-HSD inhibitors and methods of use thereof	David J. Morris Syed Abdul Latif Matthew Hardy	Pending
MHI-003	11/595,826	Selective testicular 11beta-HSD inhibitors for the Treatment of Hypergonadism Associated Disorders and Modulation of Fertility	David J. Morris Syed Abdul Latif Matthew Hardy Renshan Ge	Pending

RESEARCH WORK IN PROGRESS

Our main interest is in the study of regulation of metabolism of adrenal steroids in salt balance and hypertension (in collaboration with Dr. David Morris).

We have screened hundreds of compounds against the 2 isoenzymes of 11β-hydroxysteroid dehydrogenase, isoform 1 and 2, for their inhibitory or stimulatory

properties. We have also shown the presence of endogenous substances in human urine that inhibit 11β-hydroxysteroid dehydrogenase and steroid 5β-reductase which may play a role in sodium homeostasis and hypertension.

In an on-going program we are in the process of isolating and chemically characterizing these endogenous substances present in human urine in a variety of pathological conditions and in Low-Renin/High-Renin Essential Hypertensive subjects.

We have become interested in the expanded role of endogenous inhibitors of 11β-HSD1 in the regulation of androgen synthetic pathway in rat leydig cell. The goal of this project is to study the mechanism of glucocorticoids and mineralocorticoids in the supression or stimulation of androgen synthesis. In collaboration with Dr. Ge in (Late) Dr. Mathew Hardy's Lab (Rockefeller University and Population Council, New York), we have recently shown that rat leydig cell do express and synthesize 11β-hydroxylase. We have also demonstrated that 11β-hydroxlated- and 11keto-metabolites of progesterone and testosterone are potent inhibitors of 11β-HSD1 for dehydrogenase and oxidoreductase activities, respectively. Thus, rat leydig cell would be a good model to study the role of corticoids and their metabolic derivatives on 11β-HSD1 in the regulation of androgen levels (both short term "metabolic effects" and long-term "genomic effects").

TEACHING INVOLVEMENT:

Brown Pathology Residency Rotation in Chemistry

Rotation in Clinical chemistry is completed in 13 weeks. Residents spend 9 weeks in Laboratory at The Miriam Hospital, and the rest of the rotation takes place at Rhode Island Hospital and Women and Infant Hospital Laboratories.

July-Sept 1997……..B.Taylor MD
Oct- Dec 1997 …… Y.Gray and E. Sotomayor MD
July- Sep 1998 ……S.Mangray MD and M.Stancu MD
Oct- Dec 1998…… N.Tatevosyants MD and I Hanna MD
Jan- March 1999……..S.Chai MD and Yupo Ma
July-Sep 1999…… Virgina Walters MD
Oct- Dec 1999…… Janush Starakiewicz MD
Jan- March 2000……...L.Chai MD and F. Liu
April- June 2000……Peiqing Wu MD and Jaleh Mansouri MD
April- June 2001……Li Wang MD and Song Zhao MD
August 2001…….Chengen Xu MD
Dec 2001-Feb 2002……James Carsten MD and Adam Carter DO
Aug – Oct 2002……..Michele Lomme MD and Catherine Breen MD
Jan – March 2003……Yaoxian Ding MD
April 2004……Chengen Xu MD
July – Sep 2004……Jinhong Li MD
March – May 2005……Pavni Khanna MD

Aug – Oct 2005……..Evgeny Yakirevich MD
Nov 2005-Jan2006…….Brody Winn MD and S.A. Javad B.Shirazi MD
Feb – April 2007…….Khyle Kurek MD and Mark Legolvan DO
Dec 2007 - Feb 2008…….Wesley Greaves MD
Apr – June 2008……Alvaro Laga MD
Sep – Nov 2008…….Weibiao Cao MD and Ying Zhang MD
Jan – March 2010……. Martin H.T. Luu MD and Hiba Alhumaidan MD
April - June 2010…….. Jerome L. Jean-Gilles MD
Sep – Nov 2010……..Andres Matoso MD and Ahmad A. Alduaij MD
Nov – Jan 2011……..Kamaljeet Singh MD
Jan- March 2013……Shaolei Lu MD and Ralph Sams MD
March- May 2013……Carlos Esteva MD and Shahrzad Ehdaivand MD
April-June 2014……..Michael Chaump MD and Elizabeth Kalife MD
Feb – May 2015……..Sonja Chen MD
Feb – May 2015……..Chad Ellermeier MD
Feb – May 2015……..Rashna Clubwala MD
Feb – May 2015……..Jianhong Li MD
Sep 2016 currently training….Natalia Belova MD
Sep 2016 currently training….Ga Hie Nam MD

Brown Pathology Residency Monday Morning Conference

(1998 to Present)…Interactive lectures (2 to 3/ year) are given to Pathology Residents on various clinical topics including bilirubin in relation to hepatic metabolism and related diseases, Cardiac Markers, diabetes and carbohydrate metabolism, lipid metabolism related to coronary heart disease, Thyroglobulin and Thyroid Auto-antibodies, PTH and vitamin D metabolism related to calcium homeostasis, use of intra-operative PTH assay, Cancer Markers etc.

Lectures Given to Medical Technologists

(1999 to present)…The class of medical technologist is divided into small groups. Lectures are given to each group during their rotation through Biochemistry lab. The topics discussed are Legionella disease and Legionella Urinary Antigen Assay, Calcium, Magnesium and Phosphate Metabolism. Lipids and lipid metabolism related to coronary heart disease.