

Dr. Shutish Patel

Medical Qualifications

American Neurological Association.

1983 Board Certified by the American Board of Psychiatry and Neurology

1977 FLEX, Boston, MA

Licensed to practice medicine Connecticut 1976 ECFMG

M.B.B.S. With Distinction: University of Bombay, India 1975

APPOINTMENTS

2019 Current: Chief of Neurology, Middlesex Health, Middletown, CT.

1984-2019 Neurologist, VA Connecticut Healthcare System.

April 1997-05 Chairman, Continuous Quality Improvement, Council VA Connecticut Healthcare System

1995-2005 Chief Medical Director for Clinics and External Affairs VA Connecticut Healthcare System

Jan 1995 – June 1995 Acting Medical Center Director

1995 VA Medical Center, Newington, CT

1994-1995 Chairman, Chief of Staff Council, VA Medical Centers, Region 1 (New England)

1992-1995 Member, Board of Directors of the Capital Area Health Consortium, Hartford, CT

1990-1998 Associate Professor of Neurology and Program in Neuroscience, University of Connecticut Health Center, Farmington, CT

1984-1995 Chief, Neurology Service, VA Medical Center, Newington, CT

1984-1989 Assistant Professor of Neurology, University of Connecticut Health Center, Farmington, CT

1983-1984 Consultant and Attending Neurologist, Bethesda Naval Hospital, Bethesda, MD

1989-1998 Director, Neurobiology Research Laboratory, VA Connecticut Healthcare System, Newington, CT.

1989-1995 Chief of Staff, VA Medical Center, Newington, CT.

1989-1995 Associate Dean for Veterans Affairs, University of Connecticut Health Center, Farmington, CT.

INTERNSHIPS

1977-1978 PGY I Pediatrics, Baystate Medical Center (Tufts University), Springfield, MA.

RESIDENCY TRAINING

1979 Chief Resident in Pediatrics, Baystate Medical Center, Springfield, MA

1978-1979 PGY II Pediatrics, Baystate Medical Center, Springfield, MA

1979-1982 PGY I-III Neurology, Baylor College of Medicine, Houston, TX

1981 Chief Resident in Neurology, Ben Taub General Hospital, Houston, TX

1982 Chief Resident in Neurology, Neurosensory Center of Houston, Baylor College of Medicine, Houston, TX

RESEARCH TRAINING

1982-1984 Medical Staff Fellow, Developmental and Metabolic Neurology Branch, National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Bethesda, MD (Roscoe O. Brady, M.D., Laboratory Director)

HONORS AND COMMITTEE MEMBERSHIPS

1993-1995 – Ad Hoc Reviewer, NIH Neurology A Study Section

1995- Member-NIH Neurology A Study Section 1998 Member-NIH Brain Disorders and Clinical Neurosciences (2) Study Section

1999- Member-NIH Brain Disorders and Clinical Neurosciences (3) Study Section

1999 Invited Scientific Reviewer for The Wellcome Trust, UK

Jan 1995 Aug 1995 Chairman, NIH Brain Disorders and Clinical Neurosciences Study Section Site Visit Team May 1997 Nov 1998 June 2000

2003 Member- NIH, National Center for Research Resources Special Review Committee for Establishment of Rare Disorders Research Centers.

2015-2017 Reviewer- Extramural Loan Repayment Program, National Center for Advancing Translational Sciences, NIH.

2009 Member- NIH, National Center for Research Resources Special Review Committee for Establishment of Rare Disorders Research Centers.

2018-2019 Member- NIH, National Center for Research Resources Special Review Committee for Establishment of Rare Disorders Research Centers.

2004 Ad Hoc Member- NIH CDIN 01 Study Section.

1976 University Rank Certificate for standing second out of 561 candidates in the final M.B.B.S. examination, University of Bombay.

1975 Parab Memorial Prize for Ranking First in the final M.B.B.S. examination at the T.N. Medical College, Nair Hospital, University of Bombay.

SELECTED INVITED LECTURES AND SPECIAL PRESENTATIONS

May 1999 Invited Participant: Annual Scientific Advisory Board Meeting, Ara Parseghian Medical Research Foundation for Studies on Niemann-Pick type C disease, Tucson, Arizona.

Sep 9, 1997 Neurology Grand Rounds: Yale University School of Medicine: "Of Mice and Men": Niemann-Pick type C disease, cholesterol and neurodegeneration.

June 1995 Shriver Center for Mental Retardation, Harvard Medical School, Waltham, Mass. "Cellular apoD Processing Defects in Niemann-Pick type C disease".

MILITARY EXPERIENCE

1994 –1998 Lt. Colonel, USAR, MC; Honorable Discharge

1987-1994 Major, USAR, MC, First Army Augmentation Division, Fort Meade, MD

1988 Participant, Task Force 111, Medical Element, Honduras, July 1991 Participant, Emergency Deployment Training for the Persian Gulf War- February 1991

CLINICAL INTERESTS

Degenerative Neurological Disorders
Inherited Metabolic Diseases

RESEARCH INTERESTS

Cellular and Molecular Neurobiology
Neurodegenerative Disorders
Cholesterol metabolism

SOCIETY MEMBERSHIPS

American Academy of Neurology
American Association for the Advancement of Science
Society for Neuroscience
New York Academy of Sciences
American Society for Neurochemistry
International Society for Neurochemistry International Neurotoxin Association (INA)

JOURNAL REVIEWER (AD HOC)

American Journal of Physiology
The Anatomical Record
Biomednet Brain Research
Biochim. Biophys. Acta.
Carcinogenesis Journal of Neurochemistry Life Sciences
Molecular Neurobiology
Neuroscience
Letters Microscopy Research and Technique

RESEARCH GRANTS

1. "Cholesterol metabolism in the sphingomyelin lipidoses" UCONN Research Foundation, December 1984.
2. "Biochemical studies in the sphingomyelin lipidoses" Veterans Administration RAG grant, May 1985.
3. UCONN Research Foundation Grant for studies on the Cholesterol Storage Disorder (csd) mutant mouse, December 1985.
4. Investigator: Veterans Administration Cooperative Study #308: "Stroke Prevention in Nonvalvular Atrial Fibrillation." 1987-1991.
5. Veterans Administration Merit Review Grant - "Developmental Neurobiology of the

Cholesterol Storage Disorder (CSD) mutant mouse" – 1987-1990.

6. "Interspecific backcross analysis for chromosomal linkage of the Niemann-Pick type C mutant mouse". Patterson Trust Foundation Grant 1991.
7. Veterans Administration Merit Review Grant – "Regulation of cholesterol homeostasis in astrocytes" – 1990-1994.
8. NIH-RO1: 1RO1 NS32160-01 "Neurobiology of medium aspiny neurons in Huntington's Disease"- 1993-1996 (Co-Principal Investigator).
9. NIH-RO1: NIH-RO1: 1RO1NS 34339: "Apolipoprotein D, cholesterol and neurodegeneration" -1994- 1998 (Principal Investigator).
10. NIH R15 NS36408-01 "Uric Acid Protection from MPTP Neurotoxicity". (Consultant on project)
11. NIH NIDCD T32 DC00025-11, Communicative Disorders: Cellular and Neural Biology, 07/01/97-6/30/02. My role was that of mentor for trainees on this Center Grant. (PI: D. K. Morest, M.D.).
12. NIH-RO1: 2RO1NS 34339-05: "Cholesterol and Neurodegeneration" -1994-2002 (Principal Investigator).
13. NIH-RO1: 2RO1NS 34339: Infrastructure Enhancement Equipment Award: -July, 2000 (Principal Investigator).
14. NIH-RO1: 2RO1NS 34339: Parkinson's Disease Research Supplement:- May, 2001 (Principal Investigator).
15. NIH AG 5R01AG019521-02: "Role of apoD in Neurodegeneration" 7/1/02-6/30/08.

PUBLICATIONS

1. Patel, S.C. and Peck, E.J., Jr.: Comparison of centrifugation and filtration assays of ligand binding: Do multiple GABA receptive sites exist? (1982) J. Neurosci. Res. 8: 603- 611.
2. Jankovic, J. and Patel, S.C. : Blepharospasm associated with brainstem lesions. (1983) Neurology, 33: 1237-1240.
3. Patel, S.C., Davis, G.J. and Barranger, J.A. Gaucher's disease in a patient with chronic active hepatitis. (1986) American Journal of Medicine 80: 523-525.
4. Pentchev, P.G., Comly, M.E., Kruth, H.S., Patel, S.C., Proestel, M. and Weintroub, H. The cholesterol storage disorder of the BALB/C mouse: a primary lesion in the esterification of exogenous but not endogenous cholesterol. (1986) J. Biol Chem: 261, 6: 2772- 2777.
5. Pentchev, P.G., Comly, M.E., Kruth, J.S., Vanier, M.T., Wenger, D.A., Patel, S.C. and Brady, R.O.: A defect in Cholesterol esterification in certain patients designated as Niemann-Pick Disease Type C. (1985) Proc. Natl Acad Sci, USA: 82, 8247-8251.
6. Kruth, H.S., Comly, M.E., Butler, J.D., Vanier, M.T., Fink, J.K., Wenger, D.A., Patel, S.C. and Pentchev, P.G. Type C Niemann-Pick disease: Abnormal metabolism of low density lipoprotein in homozygous and heterozygous fibroblasts. (1986) J. Biol. Chem.:261; 35: 16769-16774.
7. Pentchev, P.G., Kruth, H.S., Comly, M.E., Butler, J.D., Vanier, M.T., Wenger, D.A. and Patel, S.C. Type C Niemann-Pick disease: A parallel loss of regulatory responses in both the uptake and esterification of LDL-derived cholesterol in cultured fibroblasts. (1986) J. Biol. Chem.: 261, 35: 16775-16780.

8. Patel, S.C., Suresh, S., Weintraub, H., Brady, R.O. and Pentchev, P.G. Impaired cholesterol esterification in mixed primary brain cell cultures of the Lysosomal Cholesterol Storage Disorder (LCSD) mouse mutant. (1987) *Biochemical and Biophysical Research Communications*: 143 (1): 233-240.
9. Pentchev, P.G., Comly, M.E., Kruth, H.S., Tokoro, T., Butler, J., Sokol, J., Filling-Katz, M., Quirk, J.M., Marshall, D.C., Patel, S.C. and Brady, R.O. Group C Niemann-Pick disease: Faulty Regulation of LDL-Uptake and Cholesterol Storage in Cultured Fibroblasts. (1987) *Faseb Journal*: 1 (1): 40-45.
10. Schneiderman, H., DeLegge, M., Grunnet, M. and Patel, S.C. Deteriorating neurologic status in a young woman with Schizophrenia. (1988) *Reviews in infectious diseases*: 10: (1) 191-197.
11. Patel, S.C. Pentchev, P.G., Kruth, H.S., Grunnet, M.L. and Suresh, S : Abnormal cholesterol metabolism in primary brain cultures of the Lysosomal Cholesterol Storage (LCSD) murine mutant. "Lipid Storage Disorders – Biological and Medical aspects", Salvayre, R, Douste-Blazy, L and Gatt, S, eds Nato ASI Series, (1988) 150: 193-200 Plenum Press, New York.
12. Sokol, J., Blanchette-Mackie, E.J., Kruth, H.S., Dwyers, N.K., Amende, L.M., Butler, J.D., Robinson, E., Patel, S.C., Brady, R.O., Comly, M.E., Vanier, M.T. and Pentchev, P.G. Type C Niemann-Pick disease: lysosomal accumulation and defective intracellular mobilization of low density lipoprotein cholesterol. (1988) *J. Biol. Chem.* 263: (7) 3411-3417.
13. Patel, S.C. and Pentchev, P.G. Genetic disorders of lysosomal function in animals.(1989) *Annu. Rev. Nutr.* 9: 395-416.
14. Patel, S.C., Papachristou, Dimitrios N. and Patel, Yogesh C. Quinolinic acid augmentssomatostatin gene expression in cultured rat cortical neurons. (1990) *J. Neurochem* 56, 1286-1291.
15. Patel, S.C., Barton,N.W. and Argoff, C. Niemann-Pick disease types A, C and D, Gaucher disease types I, II and III and Wolman's disease. *Handbook of Clinical Neurology*, Vol. 16, (1992) *Hereditary Neuropathies and Spinocerebellar Atrophies*, de Jong, J.M.B.V. (Ed.) Elsevier Science Publishers B.V., pp 147-164.
16. Butler, J.D., Blanchette-Mackie, J., Goldin, E., O'Neill, R.R., Carstea G., Roff, C.F., Patterson, M.C., Patel, S.C., Comly, M.E., Cooney, A., Vanier, M.T., Brady, R.O. and Pentchev, P.G (1992). Progesterone blocks cholesterol translocation from lysosomes. *J. Biol. Chem.* 267,23797-23805.
17. Patel, S.C., Asotra, K., Patel, Y.C. and Suresh, S. (1994) 25-hydroxycholesterol induces reorganization of lysosomes in normal but not Niemann-Pick disease type C astrocytes. *NeuroReport:Volume 5, Issue #16*: 2121-2124.
18. Patel, S.C., Asotra, K., Patel, Y.C., McConathy, W., Patel, W.J., Patel, R.C., and Suresh, S. (1995). Astrocytes synthesize and secrete the lipophilic ligand carrier apolipoprotein D. *NeuroReport:Volume 6, Issue #4*: 653-657.
19. Patel, S.C., Asotra, K. and Patel, Y.C. (1995) Huntington's disease. In "Neurotherapeutics: Emerging Strategies" Pullan, L. and Patel, J., eds. Humana Press, Totowa , NJ pp. 323-342.
20. Patel, Y.C., Warszynska, A., Liu, J-L., Kent, G., Papachristou, D.N., and Patel, S.C.: (1995). Differential stimulation of somatostatin but not neuropeptide Y gene expression by quinolinic acid in cultured cortical neurons. *J. Neurochem.* 65 (3): 998-1006.

21. Sela, S., White, B.H., Uh, M., Kimura, K., Patel, S.C. and Sidhu, A. (1997). Dysfunctional D1A receptor-G-protein coupling in proximal tubules of spontaneously hypertensive rats is not due to abnormal G-proteins. *J. Hypertension*-15(3): 259-267.
22. Ong, WY, He Y, Suresh, S and Patel, S.C. (1997). Differential expression of apolipoprotein D and apolipoprotein E in the kainic acid-lesioned rat hippocampus – *Neuroscience*-79(2): 359-367.
23. Kumar, U., Asotra, K., Patel, S.C. and Patel, Y.C. (1997). Expression of NMDA receptor-1 (NR-1) and huntingtin in striatal neurons which colocalize somatostatin, neuropeptide Y and NADPH- diaphorase: a double label histochemical and immunohistochemical study”- *Exp. Neurol*-145:412- 424.
24. Patel, R.C., Lange,D., Mcconathy,W.J., Patel, Y.C. and Patel, S.C. (1997) Probing the structure of the ligand binding cavity of lipocalins by fluorescence spectroscopy. *Protein Engineering*- 10(7):101- 105.
25. Sidhu. A., Uh, M., Sela, S., White, B.H., Kimura, K. and Patel, S.C. (1997). Molecular and structural differences between rat brain D-1 and renal DA-1 dopamine receptors. *Neuroscience Research*- 29(1):1-8.
26. Suresh, S., Yan, Z., Patel, R.C., Patel, Y.C., and Patel, S.C. (1998). Cellular cholesterol storage in the Niemann-Pick disease type C mouse is associated with increased expression and defective processing of apolipoprotein D. *J. Neurochem*-70: 242-251.
27. Lange, D., Patel, R.C. and Patel, S. C. (1998). Retinol and Retinoic Acid Bind to a Surface Cleft in Bovine β – Lactoglobulin: A Method of Binding Site Determination Using Fluorescence Resonance Energy Transfer. *Biophysical Chemistry* 74(1):45-51.
28. Sidhu, A.S., Kumar, U., Uh, M. and Patel, S.C. (1998). Diminished expression of renal dopamine D1A receptors in the kidney inner medulla of the spontaneously hypertensive rat. *Hypertension*- 16(5):601-608.
29. Sidhu, A., Kimura, K., White, B.H., and Patel, S.C. (1998). Multiple coupling of human D-5 dopamine receptors to guanine nucleotide binding proteins, Gs and Gz- *J. Neurochem* 70(6):2459-67.
30. Kumar, U., Sasi, S., Suresh, S., Patel, A., Thangaraju, M., Metrakos, P., Patel, S.C. and Patel, Y.C. (1999). Subtype selective expression of the five somatostatin receptors (hSSTR1-5) in human pancreatic islet cells. *Diabetes*- 48(1):77-85.
31. Watari, H., Blanchette-Mackie, E.J., Dwyer, N.K., Glick, J.M., Patel, S.C, Neufeld, E.B., Brady, R.O., Pentchev, P.G., Strauss III, J.F. (1999) Niemann-Pick C1 protein: Obligatory roles for N-terminal domains and lysosomal targeting in cholesterol mobilization. *Proc. Natl. Acad. Sci., USA*: 96, (3): 805-810.
32. Patel, SC, Suresh, S, Kumar, U, Hu, CY, Cooney, A., Blanchette-Mackie, EJ., Neufeld, EB, Patel, RC, Brady, RO. Patel, YC, Pentchev, PG and Ong, W-Y. (1999). Localization of Niemann-Pick C1 protein in astrocytes: Implications for neuronal degeneration in Niemann-Pick type C disease. *Proc. Natl. Acad. Sci., USA*: 96, (3): 1657-1662.
33. Neufeld, EB, Wastney, M, Patel, SC, Suresh, S., Cooney, AM, Dwyer, NK, Roff, CF, Ohno, K, Morris, J., Carstea, E, Incardona, JP, Vanier, MT, Pentchev, PG and Blanchette-Mackie, EJ. (1999). The Niemann-Pick C1 protein resides in a novel organelle linked to retrograde transport of multiple lysosomal cargo. *J. Biol. Chem* – 274: 9627-9635.
34. Ong, W.Y., Lau, C.P., Leong, S.K., Kumar, U., Suresh, S. and Patel, S.C. (1999).

Apolipoprotein D gene expression in the rat brain and light and electron microscopic immunocytochemistry of apolipoprotein D expression in the cerebellum of neonatal, immature and adult rats- *Neuroscience*- 90 (3): 913-922.

35. Watari, H., Blanchette-Mackie, E.J., Dwyer, N.K., Watari, M., Neufeld, E.B., Patel, S.C., Pentchev, P.G., and Strauss III, J.F. (1999) Mutations in the leucine zipper and sterol-sensing domain inactivate the Niemann-Pick C1 (NPC1) glycoprotein. *J. Biol. Chem* 274: 21861-21866.
36. Franz G, Reindl M, Patel S.C., Beer R, Unterrichter I, Berger T, Schmutzhard E, Poewe W, Kampfl A (1999). Increased expression of apolipoprotein D following experimental traumatic brain injury. *J Neurochem.* 73(4):1615-25.
37. Watari H, Blanchette-Mackie EJ, Dwyer NK, Sun G, Glick JM, Patel S, Neufeld EB, Pentchev PG, Strauss JF 3rd (2000) The NPC1-containing compartment of human granulosal-lutein cells: a role in the intracellular trafficking of cholesterol supporting steroidogenesis. *Exp Cell Res* 255(1):56- 66.
38. Rocheville, M., Lange, D.C., Kumar, U., Patel, SC., Patel, R.C. and Patel, Y.C. (2000). Receptors for dopamine and somatostatin: heterodimer formation with enhanced functional activity. *Science* – 288 (5463): 154 – 157.
39. Ong, W.Y., Soh, YP, Hu, CY, Lim, TM, Suresh, S., Pentchev, PG and Patel, S.C. (2000). Neuronal Localization of Sterol Regulatory Element Binding Protein-1 (SREBP-1) in the Rodent and Primate Brain: A Light and Electron Microscopic Immunocytochemical Study- *Neuroscience*-2000;97(1):143- 53.
40. Watari H, Blanchette-Mackie EJ, Dwyer NK, Watari M, Burd CG, Patel S, Pentchev PG, Strauss JF 3rd. (2000) Determinants of NPC1 Expression and Action: Key Promoter Regions, Posttranscriptional Control, and the Importance of a “Cysteine-Rich” Loop. *Exp Cell Res.* 259(1): 247-256.
41. Zhang M, Dwyer NK, Neufeld EB, Love DC, Cooney A, Comly M, Patel S, Watari H, Strauss JF, Pentchev PG, Hanover JA, Blanchette-Mackie EJ. (2001). The Niemann-Pick C1 late-endosomal compartment is linked to cholesterol-modulated glycolipid sorting. *J Biol Chem* 276 (5) :3417-3425.
42. Hu CY, Ong WY and Patel SC (2000). Regional distribution of NPC1 protein in monkey brain. *J. Neurocytol.* 29(10):765-73.
43. Ong, W-Y, Kumar,U., Switzer, R.C., Sidhu, A., Suresh, G., Hu, C-Y and Patel, S.C. (2001). Neurodegeneration in Niemann-Pick type C Disease Mice. *Exp. BrainRes*-141:218-231.
44. Hu, C-Y., Ong, W-Y., Sundaram, R.S., Chan, C. and Patel, S.C. (2001). Immunocytochemical Localization of Apolipoprotein D in Oligodendrocyte Precursor Cells, Perivascular cells, and Pericytes in the Human Cerebral Cortex. *J Neurocytol* 2001; 30 (3) :209-18.
45. Patel, RC, Kumar,U., Lamb, DC, Eid, JS, Rocheville, M., Grant, M., Rani, A, Hazlett, T., Patel, SC, Gratton, E and Patel, YC (2002). Ligand binding to somatostatin receptors induces receptor specific oligomer formation in live cells. *Proc. Natl. Acad. Sci., USA* 99(5):3294-9.
46. Shin, Y, Kumar, UK, Patel, YC, Patel, SC and Sidhu, A.S. (2003). Differential expression of D2-like dopamine receptors in kidney of the spontaneously hypertensive rat- *J. Hypertension.* 21(1): 199- 207.
47. Ong-WY, Hu, C-Y and Patel, S.C. (2002). Apolipoprotein D in the Niemann-Pick type C disease mouse brain: An ultrastructural immunocytochemical analysis. *J Neurocytol.* 31 (2):

121-9.

48. Ong W.Y., Eugene, Lu X.R., Hu C.Y., Lo S.K., Farooqui A.A., Patel S.C., Halliwell B. (2003) Increase in cholesterol and cholesterol oxidation products, and toxicity of cholesterol oxidation products in the rat hippocampus after kainate induced excitotoxic injury – an immunocytochemical, filipin histochemical, and gas chromatography /mass spectrometric (GCMS) study. *Brain Pathol.* 13(3):250-62.
49. Differential trafficking of the Niemann–Pick C1 and 2 proteins highlights distinct roles in late endocytic lipid trafficking (2003). Zhang, M, Sun, M, Dwyer, NK, Comly, ME, Patel, SC, Sundaram, R, Hanover, JA and Blanchette-Mackie, EJ.). *Acta Pediatr Suppl.* 443:63-7.
50. Ong, W-Y, Sundaram, R, Huang, E, Kumar, U, Ghoshal, SG, Pentchev, PG and Patel, S.C (2004) Neuronal Localization of Niemann Pick C2 Protein (NPC2) in the Mouse Brain. *Neuroscience* 2004;128(3):561-70.
51. Hildebrand MS, de Silva MG, Klockars T, Solares CA, Hirose K, Smith JD, Patel SC, Dahl HH. Expression of the carrier protein apolipoprotein D in the mouse inner ear. *Hear Res.* 2005; 200 (1- 2):102-14.
52. Xin He, Andrew Jenner, Wei-Yi Ong, Akhlaq A Farooqui, Shutish C Patel (2006) Lovastatin modulates increased cholesterol and oxysterol levels and has a neuroprotective effect on rat hippocampal neurons after kainate injury *J. Neuropathol Exp Neurol* 2006 Jul;65(7):652-63.
53. Kumar, U and Patel, SC. (2006) Immunohistochemical localization of dopamine receptor subtypes (D1R-D5R) in Alzheimer’s disease brain. *Brain Res.* 2007; 1131(1):187-96.
54. Xin He; Jinattajittiwat; Ji-Hyun Kim; Andrew M Jenner; Akhlaq A Farooqui, ShutishC Patel and Wei-Yi Ong. (2009) Apolipoprotein D modulates F2 isoprostane and 7-ketocholesterol formation and has a neuroprotective effect on organotypic hippocampal cultures after kainate-induced excitotoxic injury. *Neurosci Lett.* 2009 May22;455(3):183-6.

ABSTRACTS

1. Jankovic, J. and Patel, S.C.: Brainstem origin of Blepharospasm.(1982) *Neurol.*, 33 (Suppl 2) 33: 162.
2. Patel, S.C., Spitz, M.C. and Barranger, J.A. (1984) Partial sphingomyelinase deficiency in the syndrome of photomyoclonus, lipomas, ataxia and dementia. *Neurol.* 34 (3): 196. Presented at the American Academy of Neurology meeting.
3. Patel, S.C., Das, P.K., Sorrell, S. and Barranger, J.A. (1984) Monensin inhibits Catabolism of sphingomyelin in intact cultured skin fibroblasts. *Fed. Proc.* 43 (6): 1565.
4. Reddy, P.U.M., Murray, G.J., Patel, S.C., Brady, R.O. and Barranger, J.A. (1984) Purification of bovine brain b-glucocerebrosidase. *Fed. Proc.* 43 (7): 2014.
5. Pentchev, P. G.; Comly, M. E.; Vanier, M. T.; Kruth, H. S.; Patel, S.; Brady, R. O.: Type C Niemann- Pick disease: a defect in intracellular esterification. (Abstract) *Am. J. Hum. Genet.* 37: A15, 1985.
6. Comly, M.E., Pentchev, P.G., Kruth, H., Vanier, M., Wenger, D., Patel, S.C. and Brady, R.O. (1986) Impaired cholesterol processing in Niemann-Pick, type C patients. Presented at the American Society for Neurochemistry meeting, Montreal, Quebec, Canada, March 16-12.
7. Pentchev, P.G., Brady, R.O., Kruth, H.S., Comly, M.E., Vanier, M.T., Wenger, D.A. and Patel,

- S.C. (1986) A lesion in Cholesterol esterification specifically associated with chronic neuropathic Type C Niemann-Pick disease. Presented at the American Academy of Neurology meeting, May 1.
8. Grunnet, M.L. Suresh, S., Yamase, H. Pentchev, P.G., Brady, R.O. and Patel, S.C. (1987) Neuropathology of LCSD Balb/c hypomyelinated mouse: an electron microscopic and immunohistochemical study. American Congress of Neuropathology, Seattle, Washington.
9. Patel, S.C., Pentchev, P.G., Kruth, H.S. and Suresh, S. (1987) Cholesterol metabolism in primary brain cultures of the Lysosomal Cholesterol Storage murine mutant. Aspen Bile acid/cholesterol conference. Aspen, Colorado, August, 1987.
10. Patel, S.C., Pentchev, P.G., Kruth, H.S., Grunnet, M.L. and Suresh, S. (1987).Cholesterol synthesis and esterification in primary brain cultures of the Lysosomal Cholesterol Storage murine mutant. Nato Advanced Research Workshop and INSERM Symposium-Lipid storage disorders (Biological and Medical Aspects), Toulouse, France.
11. Grunnet, M.L., Suresh, S. Wilbur, D. Pentchev, P.G. and Patel, S.C. (1988) Lectin histochemistry of the Balb/c Cholesterol Storage Disorder Hypomyelinated mouse. American Congress of Neuropathology, Dallas, Texas.
12. Patel, S.C., Papachristou, D.N. and Patel, Y.C. (1989) Quinolinc acid increases somatostatin mRNA and peptide levels in cultured rat cortical neurons: Society for Neuroscience, Oct. 29-Nov. 3, Phoenix, Arizona.
13. Patel, S.C., Heermann, K. and Suresh, S. (1990). Abnormal cholesterol storage and processing in astrocytes in the cholesterol storage (BALB/c-csd) mouse, an animal model of Niemann-Pick disease, type C. American Society for Neurochemistry meeting, March 4, Phoenix, Arizona.
14. Patel, S.C., Boyles, J.K., Suresh, S. and Pentchev, P. (1991). Apolipoprotein and lipoprotein receptor studies in the cholesterol storage mouse – an animal model of Niemann-Pick disease, type C. American Academy of Neurology meeting, Boston, MA, April, 1991, Neurology 41, Suppl. 505P.
15. Patel, Y.C., Warszynska, A., Kent, G., Liu, J.L., Papachristou, D.N. and Patel, S.C. (1992). NMDA differentially stimulates somatostatin (SS) but not neuropeptide Y (NPY) gene expression in cortical neurons. Society for Neuroscience , Anaheim, CA
16. Patel, Y.C., Galanopoulou, A.S., Seidah, N.G. and Patel, S.C. (1993). Inability of PC2 to process prosomatostatin (PSS) in granulated secretory cell lines. Society for Neuroscience, 19(2): 1362, Abstract # 559.13
17. Patel,S.C., Suresh, S., Ciurzynski, K. and Pentchev, P. G. (1993). Deficient processing of apolipoprotein D in cultured astrocytes from the Niemann-Pick disease type C mutant mouse. Trans Am Soc Neurochem 24(1): 157 Abstract #129.
18. Patel, S. C., Suresh, S., Roff, C. R., Blanchette-Mackie, E.J., Asotra, K. and Pentchev, P.G. (1994) Primary cultured cells and transformed cells from Niemann-Pick type C mouse lack a factor essential for fibril bundling and cell shape change in response to 25-hydroxycholesterol. Tran Am Soc Neurochem 25(1): 182 Abstract #170.
19. Asotra, K., Suresh, S., Shaskan, E. G., Pentchev, P. G. and Patel, S. C. (1994) Cultured astrocytes from Niemann-Pick type C mouse brain have defective transport of apolipoprotein D, dysfunctional lysosomal proton pump and aberrant cysteine proteinase(s). Trans Am Soc Neurochem 25(1):99 Abstract #6.

20. Asotra, K., Patel, Y.C., Suresh, S., Dawson, G., Schwartz, G., Alving, C. and Patel, S.C. (1994)Cholesterol rich domains in oligodendrocytes and myelin recognized by a monoclonal antibody. XIIIth International Congress of Pharmacology, July 24-29, 1994, Montreal, Canada.
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