

David Garrett Changaris, MD

Curriculum Vitae

Office Address: 801 Barret Avenue 502 584 6852
Suite 103
Louisville KY 40204

Date of Birth: January 16, 1950

Place of Birth: Charleston, South Carolina

Education: University of North Carolina BS (Math) 1970
Pennsylvania State University MD 1974

Internship: Pennsylvania State University 1974-1975

NIH Fellowship: Pharmacology 1975-1977
Pennsylvania State University
College of Medicine

Residencies : Medical University of South Carolina 1977-1978
Charleston, South Carolina
General Surgery

Medical University of South Carolina 1978-1982
Charleston, South Carolina
Neurosurgery

Board Certifications: American Board of Neurological Surgery 1985-present

Honors and Awards: Phi Eta Sigma Honor Society
Phi Beta Kappa Honor Society
Outstanding Freshman Award in Chemistry UNC
Outstanding Sophomore Award in Chemistry UNC
Leopold Schepp Scholarship
Senior Class Chairman, Medical School
Judicial Counsel
College of Medicine Penn State University
Fellow American College of Surgeons

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Competitive Research Grants

NIH: The Brain Angiotensin System A Morphologic Approach 1975-77 \$27k
South Carolina Heart Association:

Cerebrospinal Fluid Angiotensin and Pulmonary Edema 1981-82 \$9k

Veterans Administration:

Surgical Aspects of a Novel Renal Carboxypeptidase 1986-89 \$154k
Discovered and Reported Human SARS Entry (ACEII)

NIH: Injured Brain and the Novel Generation of Angiotensin 1987-92 \$309k
(Clinical Investigator Development Award NINCDS)

VA-Dept of Defense:

Alternate Pathways for the Release of Vasopressin 1988-91 \$325k

NIH (QDTP) Burn Treatment Adjuvant Therapies 2010-2011 \$175k

University Faculty Positions

University of Texas (San Antonio) 1982-1984

University of Louisville (Kentucky) 1984-1997

Division of Neurological Surgery

Department of Neurology

Department of Biochemistry

Academic Rank: Clinical Associate Professor

License (MD): Kentucky 23169 1984-Present
South Carolina 8294 1977-Present

FDA Registrations: FDA 510k Clearance of a Medical Device
Drug Manufacturing Facility: Ceela Naturals, LLC

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US Patents (Awarded)

11197824B2 Solution and Metho for Reducing the Virulence of Viruses (Covid)

10,105,332B1 Methods and composition for suppression of deep-seated fungal growth on skin

10,052,300 Methods and composition for suppression of deep-seated fungal growth on skin
9,962,354 Method and composition for bacterial or fungal suppression on skin

9,962,354B2 Method and Composition for Bacterial or Fungal Suppression on Skin

9,549,550 Method and composition for long-acting bacterial suppression on skin

7,897,160 Conjugated fatty acid-based emulsion and methods for preparing

7,074,418 Conjugated fatty acid-based emulsion and methods for preparing

6965203B2 Method and circuit for repetitively firing a flash lamp or the like

6454442 B1 Device for soft irradiation

ARTICLES

1. Changaris DG, Combs JW, Severs WB: Reproducible micro fluorescent quantitation of cytoplasmic 1:2 glycols with basic fuchstn (PAS). Histochemistry (1976) 52:1-15.

2. Changaris DG, M.D., Demers LM, Keil LC, Severs WB: Identification of Angiotensin I in the rat and human pituitary gland. Exp Neurol (1976) 11:192-194.

3. Changaris DG, M.D., Combs JW Schengrund CL: Microfluorimetry of brain glycolipid: Theoretical and applied analysis of PAS fluorescence and dye concentration. J. Histochem Cvtochem (1978) 269(4):267-276.

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4. Severs WB, Changaris DG, Keil LC, Summy-Long JV, Klase PA. Kapsha JM: The
5. Changaris DG, Keil LC, Severs WB: Localization of angiotensin II induced the rat brain. *J Histochem Cytochem* (1978) 26(4):593-601.
6. Changaris DG, Keil LC, Severs WB: Angiotensin II immunohisto-chemistry of the rat brain. *Neuroendocrinology* 1978) 25(5):257-274.
7. Changaris DG, Purohit DM, Balentine JD. Gadsden RH, Sr, Levkoff AH, stressed neonates receiving parenteral calcium. *Pediatrics* (1984): 941-946.
8. Changaris DG, Purohit DM, Balentine JD. Gadsden RH, Sr, Levkoff AH, Holden AEC, Dean DL, Jr, Bi ggs PJ: Multimodal assessment of human brain calcification with respect to parenteral calcium gluconate in stressed neonates. *Scanning Electron Microscopy* (1984) Ill: 1433-1441.
9. Changaris DG, Miller JJ, Levy RS: Angiotensin n generated by a human renal carboxypeptidase. *Biochem Biophys Res Com* (1986) 138: 573-579.
10. Changaris DG: 'Primum non Nocere': The caduceus with broken wings. *Scholar and Educator* (1986) 10(2) 65-69.
11. Changaris DG, McGraw CP, Richardson JD: Correlation of cerebral perfusion pressure and Glasgow coma scale to outcome. *J Trauma*(J978) 27:1007-1013.
12. Schurr A, Changaris DG, Rigor BM: Glutamine protects neuronal functions against cerebral hypoxia. A study using the in vitro hippocampal slice preparation. *Brain Res* (1987) 412:179-181.
13. Changaris DG: Social Policy and Research in Surgery: *Scholar and Educator*(1987) 11(2):12·18.
14. Changaris DG, Porter JL, Miller IJ, Levy RS: Des-leu Angiotensin I: Biosynthesis and Drinking Response Regul Peptides (J 988:)273-280.

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15. Changaris DG, Lesousky NW, Miller JJ, Levy RS: Subcellular localization in the brain of angiotensin-related carboxypeptidase activity distinct from converting enzyme. *Pathol Immunopathol Res* (1988) Z:200-207.
16. Miller JJ, Changaris DG, Levy RS: Conversion of Angiotensin I to Angiotensin II by Cathepsin A isoenzymes of porcine kidney. *Biochem Biophys Res Comm* (1990) 154(3) 1122- 1129.
17. McGraw CP, Changaris DG, Parker JES, Greenberg RA (1989) The Best Dichotomous Parameters for Predicting Mortality and a Good Outcome Following 48 Hours of ICP Monitoring. In: Hoff J.T., Betz A.L. (eds) *Intracranial Pressure VII*. Springer, Berlin, Heidelberg.
18. Rif, S Harrison, L, Changaris, D, Levy, R: Lithium Prevents Ouabain-Induced Behavior Changes: *Molecular and Chemical Neuropathology* (1997) pp 65-71.
19. Rif, S, Harrison, L, Rena, L, Changaris, D. Levy, R: An Animal Model for Mania: Preliminary Results: *Prog & Neuro-Psychopharmacology & Biol. Psychiatry*. (1995) pp. 955- 962.
20. Changaris, DG, McGraw CP, Richardson JD: Correlation of cerebral perfusion pressure on mortality and long term recovery. *J Trauma* (1986) 26:670.
21. Miller JJ, Changaris DG Levy RS. Purification, subunit structure and inhibitor profile of cathepsin A *Journal of Chromatography A* (1993).
22. Changaris, DG Zuoqing L. Chen T, Holick MF. Pulsed UVB Irradiation Converts 7- Dehydrocholesterol to Previtamin D3 and Photoproducts. *Biologic Effects of Light* 2001 (10.1007/978-1-4615-0937-0_5).
23. Miller JJ, Changaris DG Levy RS. Angiotensin carboxypeptidase activity in urine from normal subjects and patients with kidney damage. *Life Sciences* (1991);48(16):1529-35.

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24. Changaris DG, McGraw CP, Greenberg RA (1989) Optimal Cerebral Perfusion Pressure in Head Injury. In: Hoff J.T., Betz A.L. (eds) Intracranial Pressure VII. Springer, Berlin, Heidelberg.

25. Changaris David and Carenbauer, Anne. "Potassium Isomerized Linoleate Satisfies EPA MB-35-00 for Surface Disinfection of *Candida Auris* (AR-0381) and *Candida Albicans* (ATCC 10231)." *EC Microbiology* 17, no. 10 (2021): 26–34. <https://doi.org/DOI: 10.31080/ecmi.2021.17.01155>.

26. Changaris, David G., and Anne L. Carenbauer. "Potassium Linoleate (Isomerized) Satisfies the United States Environmental Protection Agency MB-05-16 for Hospital Disinfectant on Hard, Non-Porous Surfaces." *Cureus* 14, no. 3 (March 2022): e22851. <https://doi.org/10.7759/cureus.22851>.

CHAPTERS

Changaris DG, Demers LM Keil LC Severs WB Immunopharmacology of Angiotensin I in brain In: Central Actions of Angiotensin and Related Peptides P Buckley & CM Ferrario, Eds. Pergamon Press, New York (1976) pp 233-243.

Severs WB, ChangarisDG, Kapsha JM. Keil LC, Petro DJ I Reid IA. Summy-Long J: Presence and significance of angiotensin in cerebrospinal fluid. In: Central Actions of Angiotensin and Related Peptides.

CASE REPORTS

1. Changaris DG, McGavran MH: Craniofacial duplication (diprosopus in one of twins). *Arch Pathol Lab Med* (1976) 100:392-394.

2. Judge DM, Changaris DO, Harvey HR, Trapukdi S: Malignant APUDoma (Carcinoid) of the anterior mediastinum. *Ann Pathol* (1976) 11:491-494.

3. Changaris DG, Powers JM, Perot PL, Jr, Hungerford GD, Neal G: Subependymoma presenting as subarachnoid hemorrhage. *J Neurosurg* (1981).

ABSTRACTS, LETTERS. BOOK REVIEWS. EDITORIAL COMMENTS

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1. Changaris DG, Severs WB: Renin substrate-like substance in the rat pars intermedia. *Fed Proc* (1976)35(3):620.
2. Changaris DG, Severs WB: Renin sensitive sulfated proteoglycan .in nuclei and cytoplasm of tissues. *The Pharmacologist* (1976) 18:164.
3. Allegra JC, Changaris DG, Milner JJ, Burnside AW: Regression of intracranial artery aneurysms in polyarteritis nodosa. *Arch Pathol Lab Med* (1976)100:560.
4. Printz MP, Printz JM, Changaris, DG: Identification and Isolation of angiotensin from human cerebrospinal fluid and evidence of renin activity. *Fed Proc* (1977) 36: 1015.
5. Changaris DG, Miller JJ, Levy RS: Angiotensin II generation by a human renal carboxypeptidase *Fed Proc* (1986) 868.
6. Changaris DG Miller JJ Levy RS, Lesousky N: Regional subcellular localization of Angiotensin II generating carboxypeptidase in rat brain. (Angiotensin Specific Carboxypeptidase) *Fed Proc* (1987) 46: 3510.
7. Changaris DG: Cervical Spine Films, cost and algorithms. Editorial Comment. *Am J Surg* (1987) 153:471.
8. Changaris DG: Back Pain. Methods for clinical investigation and assessment By D.W.L. Hukins and R. C. Mulhol (eds.) Book Review. *Neurosurg* (1988).
9. Changaris DG, Miller II, Lesousky N, Levy RS: Angiotensin II generation by renal cathepsin A isoenzymes (1988) *FASEB* 2:A14.
10. Changaris DG, Miller JJ, Lesousky N, Levy RS: Oxytocin and Vasopressin inhibit synaptosomal angiotensin related carboxypeptidase (1988) *FASEB* J2:AJ324.
11. Levy RS, Changaris DG, Lesousky N: Renin and angiotensin-related carboxypeptidase (ARC) activity localized in synaptosomal subfractions. (1981) *Soc Neurosci* 14 :670 (270.3).

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12. Miller JJ, Changaris DG, Levy RS: Angiotensin-carboxypeptidase activity in human urine. (1989) Fed Proc.

INVITED LECTURES/POSTER SESSIONS/ABSTRACTS PRESENTED

The International Symposium on the Central Actions of Angiotensin and "Related Honnones, January 1976 (Houston, TX) Subject: Angiotensin I Immunohistochemistry

The Histochemistry Society. The Twenty-Ninth Annual Meeting, April 1978 (Vancouver, B.C.) Subject: Angiotensin Immunohistochemistry

The Histochemistry Society. The Thirteenth Annual Meeting, April 1979 (Keystone, CO) Subject: Angiotensin Immunohistochemistry

The Endocrinology Society of Charleston Monthly Meeting, November 1980 (Charleston, SC). Subject: Angiotensin II Immunohistochemistry.

The Department of Physiology, South Carolina School of Medicine, October 1980 (Columbia, SC). Subject: Angiotensin II Immunohistochemistry.

The American Association of Neurosurgical Nurses. Annual Meeting. May 1981 (Charleston, SC) Subject: Basic Neuropathology.

The Medical University of South Carolina, Division of Neuropathology, December 1980 (Charleston, SC) Subject: Basic: Neuroanatomy.

Scanning Electron Microscopy Meeting: Stones and Crystals in Disease, AJW 914 (Philadelphia, PA) Subject: Brain calcification in Human Neonates.

Electron Microscopy Society of The Ohio River Valley Meeting. Winter Meeting, February 1985. (Louisville, KY)

Subject: Adjunctive Scanning and Transmission Electron Microscopy for the Demonstration of Calcium in Neonatal Brain

Society of University Neurosurgeons. Annual Meeting, May 1986 (Louisville, KY)

Subject: Renin-Angiotensin System: Current Concepts and Relevance to the Central Nervous System in Trauma.

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Price Institute Research Symposium. Second Annual Meeting. June 1986
(Louisville, KY) Subject: Isolation and Purification of Human Renal
Carboxypeptidase.

American Association for the Surgery of Trauma, September 1986 (Honolulu_ HI) Subject: Correlation of Cerebral Perfusion Pressure and Glasgow Coma Scale to Outcome

Core Rotation of Neurology, University of Louisville (Louisville, KY) Two hours monthly, 1987-1997.

Gordon Research Conference Annual Meeting 1 February 1989 (Channel Island Harbor, CA) Subject: Angiotensin Immunocytochemistry

Southern Neurosurgical Society Annual Meeting. March 1989 (Point Clw, AL) Subject: Long Term Effects of Intraventricular Vasopressin

CPC: Department of Neurology University of Louisville School of Medicine, Louisville KY October 30, 1989. Subject: Long Term Effects of Intraventricular Vasopressin