

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Das, Undurti N

EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Andhra Medical College, Visakhapatnam, India	M.B; B. S.	1976	Medicine, Surgery, Gynec & Obstet
Osmania Medical College, Hyderabad, India	M.D.	1981	General Medicine
Fellow of the National Academy of Medical Sciences, New Delhi	FAMS	1992	Medicine
Fellow of Royal Society of Chemistry, London	FRSC	2013	Biological Chemistry
Mangalore University, Mangalore, India	D. Sc.	2018	Biotechnology

A. Personal Statement

Being a physician/scientist, I performed translational research in cancer, diabetes mellitus, lupus, coronary heart disease, atherosclerosis, sepsis and radiation protection. My lab studies led to a deeper understanding on the role of polyunsaturated fatty acids and their metabolism in several diseases that have the potential to be translated into newer therapeutic strategies.

Intellectual property: US patents:

1. Inventor: U N Das; Title: Methods for selectively occluding blood supplies to neoplasias. Patent no: 6,426,367. Date of grant: July 30, 2002., Filed on September 4, 2001.
2. Inventor: U N Das; Title: Method of stabilizing and potentiating the action of anti-angiogenic substances. Patent no: 6,380,253. Date of grant: April 30, 2002. Filed on January 5, 2000.
3. Inventor: U N Das; Title: Method of stabilizing and potentiating the action of anti-angiogenic substances. Patent no: 6,617,354. Date of grant: September 9, 2003; filed on: Feb 27, 2002.
4. Inventor: U N Das; Title: Method of stabilizing and potentiating the action of anti-angiogenic substances (US 7,666,910) awarded on Feb 23, 2010)., filed on Feb 27, 2002.
5. Inventor: U N Das; Title: Method(s) of preventing, arresting, reversing and treatment of atherosclerosis (US 8, 153, 392, issued on April 10, 2011)., filed on March 28, 2008.

I have also been awarded 3 patents in India as the sole inventor. Another 5 patents are pending in India

Books:

1. Das UN. *A Perinatal Strategy for Preventing Adult Diseases: The Role of Long-chain Polyunsaturated Fatty Acids*. Kluwer Academic Publishers, Boston, 2002.
2. Das UN. *Metabolic Syndrome Pathophysiology: The Role of Essential Fatty Acids and their metabolites*. Wiley-Blackwell Publishers, Ames, IA, USA, 2010.
3. Das UN. *Molecular Basis of Health and Disease*. Springer, New York, 2011.
4. Das UN. *Molecular Biochemical Basis of Cancer*. Humana press, 2020.

Peer-reviewed publications related to cancer (only 4 significant publications mentioned):

- i. Begin ME, Eills G, Das UN, Horrobin DF. Differential killing of human carcinoma cells supplemented with n-3 and n-6 polyunsaturated fatty acids. *J Natl Cancer Inst*. 1986; 77: 1053-1062.
- ii. Das UN. Tumoricidal action of cis-unsaturated fatty acids and its relationship to free radicals and lipid peroxidation. *Cancer Lett* 1991; 56: 235-243.

- iii. Das UN. From bench to the clinic: γ -linolenic acid therapy of human gliomas. *Prostaglandins Leukot Essent Fatty Acids* 2004; 70: 419-426.
- iv. Das UN. Essential fatty acids enhance free radical generation and lipid peroxidation to induce apoptosis of tumor cells. *Clinical Lipidol* 2011; 6: 463–489.

B. Positions

Positions and Employment

- a. CEO/CSO of UND Life Sciences, 2221 NW 5th St, Battle Ground, WA 98604, USA.

Other Experience and Professional Memberships

- a. *Founding Editor and Editor-in-Chief* of ***Lipids in Health and Disease***, BioMed Central, UK. From 2001-2022.
- b. *Editor-in-Chief*, ***International Journal of Autism Challenges and Solution***
- c. *Review Editor*, ***Nutrition***, Elsevier, USA.
- d. *Academic Editor*, ***Medicine***, USA.
- e. *Associate Editor* of ***Frontiers in Endocrinology; and Frontiers in Immunology***
- f. Elected as *Secretary of Nutrition and Immunology* section of ***American Society of Nutrition, USA***-2024.

Honors

- | | |
|------|--|
| 1989 | Shakuntala Amir Chand Prize of Indian Council of Medical Research |
| 1992 | Shanti Swaroop Bhatnagar prize of Council of Scientific and Industrial Research, India for work on GLA and glioma |
| 1992 | Dr. Coelho Memorial Award by Association of Physicians of India in Experimental Medicine |
| 2011 | Innocentive award for developing a urinary marker for lupus. |
| 2023 | Dr J S Bajaj Memorial prize and oration of National Academy of Medical Sciences (NAMS, New Delhi) for the discovery of endogenous anti-diabetic molecules. |

C. Contribution to Science

a. PUFAs and radiation-induced damage:

- i. Das UN, Devi GR, Rao KP, Rao MS. Prostaglandins and their precursors can modify genetic damage induced by benzo (a,) pyrene and gamma-radiation. *Prostaglandins*. 1985; 29: 911-910.
- ii. Das UN, et al. Prostaglandins can modify gamma-radiation and chemical-induced cytotoxicity and genetic damage both in vitro and in vivo. *Prostaglandins*. 1989; 38: 689-699.
- iii. Das UN, Rao KP. Effect of γ -linolenic acid and prostaglandins E1 on gamma-radiation and chemical-induced genetic damage to the bone marrow cells of mice. *Prostaglandins Leukot Essent Fatty Acids* 2006; 74:165-173.
- iv. Das UN. Radiation resistance, invasiveness and metastasis are inflammatory events that could be suppressed by lipoxin A(4). *Prostaglandins Leukot Essent Fatty Acids* 2012; 86: 3-11.

b. Polyunsaturated fatty acids and Diabetes Mellitus

- i. Krishna Mohan I, Das UN. Prevention of chemically-induced diabetes mellitus in experimental animals by polyunsaturated fatty acids. *Nutrition* 2001; 17: 126-151.
- ii. Suresh Y, Das UN. Long-chain polyunsaturated fatty acids and chemically-induced diabetes mellitus: Effect of ω -6 fatty acids. *Nutrition* 2003; 19: 93-114.
- iii. Suresh Y, Das UN. Long-chain polyunsaturated fatty acids and chemically-induced diabetes mellitus: Effect of ω -3 fatty acids. *Nutrition* 2003; 19: 213-228.
- iv. Kaviarasan K, Mohanlal J, Mohammad Mulla MA, Shanmugam S, Sharma T, Das UN, Angayarkanni N. Low blood and vitreal BDNF, LXA4 and altered Th1/Th2 cytokine balance as potential risk factors for diabetic retinopathy. *Metabolism* 2015; 64: 958-966.
- v. Das UN. Arachidonic acid and lipoxin A₄ as possible anti-diabetic molecules. *Prostaglandins Leukot Essent Fatty Acids* 2013; 88: 201-210.
- vi. Siresha B, Srinivas N, Das UN. BDNF protects pancreatic β cells (RIN5F) against cytotoxic action of alloxan, streptozotocin, doxorubicin and benzo(a)pyrene in vitro. *Metabolism* 2016; 65: 667-684.

- vii. Siresha B, Srinivas N, Das UN. Streptozotocin produces oxidative stress, inflammation and decreases BDNF concentrations to induce apoptosis of RIN5F cells and type 2 diabetes mellitus in Wistar rats. *Biochem Biophys Res Commun* 2017; 486: 406-413.
- viii. Naveen KVG, Naidu VGM, Das UN. Arachidonic acid and lipoxin A4 attenuate alloxan-induced cytotoxicity to RIN5F cells in vitro and type 1 diabetes mellitus in vivo. *BioFactors*. 2017; 43: 251-271.
- ix. Naveen KVG, Naidu VGM, Das UN. Arachidonic acid and lipoxin A4 attenuate streptozotocin-induced cytotoxicity to RIN5F cells in vitro and type 1 and type 2 diabetes mellitus in vivo. *Nutrition*. 2017; 35: 61-80.

c. PUFAs in cancer:

- i. Begin ME, Ells G, Das UN, Horrobin DF. Differential killing of human carcinoma cells supplemented with n-3 and n-6 polyunsaturated fatty acids. *J Natl Cancer Inst*. 1986; 77: 1053-1062.
- ii. Das UN. Tumorcidal action of cis-unsaturated fatty acids and its relationship to free radicals and lipid peroxidation. *Cancer Lett* 1991; 56: 235-243.
- iii. Das UN. From bench to the clinic: γ -linolenic acid therapy of human gliomas. *Prostaglandins Leukot Essen Fatty Acids* 2004; 70: 419-426.
- iv. Das UN. Essential fatty acids enhance free radical generation and lipid peroxidation to induce apoptosis of tumor cells. *Clinical Lipidol* 2011; 6: 463–489.

d. Bioactive lipids in sepsis:

- i. Das UN. Cytokines, NF- κ B, activated protein C, oxidized phospholipids, inducible cyclo-oxygenase eicosanoids, adenosine and insulin in sepsis and septic shock. *Critical Care and Shock* 6: 40-49, 2003.
- ii. Das UN. Current advances in sepsis and septic shock with particular emphasis on the role of insulin. *Med Sci Monit* 2003; 9: RA181-RA192.
- iii. Das UN. Can critical illness and sepsis be predicted or prognosticated? *Adv Sepsis* 2006; **5**: 52–59.
- v. Das UN. Relationship between gut and sepsis: Role of ghrelin. *World J Diabetes* 2011; 15: 1–7.
- vi. Das UN. Is sepsis a pro-resolution deficiency disorder? *Med Hypotheses* 2013; 80: 297-299.
- vii. Das UN. N-3 fatty acids, γ -linolenic acid, and antioxidants in sepsis. *Crit Care* 2013; 17:312
- viii. Das UN. HLA-DR expression, cytokines and bioactive lipids in sepsis. *Arch Med Sci* 2014; 10, 2: 325 335.
- ix. Das UN. Infection, Inflammation, and Immunity in Sepsis. *Biomolecules*. 2023 Aug 31;13(9):1332.

e. Bioactive lipids in rheumatology

- i. Suryaprabha P, Das UN, Ramesh G, Kumar KV, Kumar KS. Reactive oxygen species, lipid peroxides and essential fatty acids in patients with rheumatoid arthritis and systemic lupus erythematosus. *Prostaglandins Leukotrienes Essential Fatty Acids* 43: 251-255, 1991.
- ii. Das UN. Beneficial effect of eicosapentaenoic acid and docosahexaenoic acid in the management of systemic lupus erythematosus and its relationship to the cytokine network. *Prostaglandins Leukotrienes Essential Fatty Acids*. 51: 207-213, 1994.
- iii. Krishna Mohan I and Das UN. Oxidant stress, anti-oxidants and essential fatty acids in systemic lupus erythematosus. *Prostaglandins Leukotrienes Essential Fatty Acids*. 56: 193-198, 1997.
- iv. Das UN. Current and emerging strategies for the treatment and management of systemic lupus erythematosus based on molecular signatures of acute and chronic inflammation. *J Inflammation Res* 2010; 3: 143–170.
- v. Das UN. Can vagus nerve stimulation halt or ameliorate rheumatoid arthritis and lupus? *Lipids Health Dis* 2011; 10: 19.