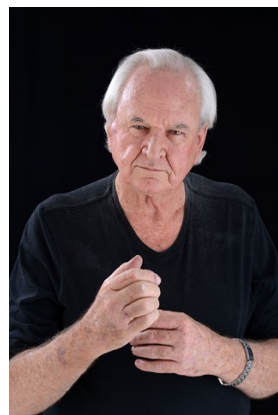


## **DR. CARL FRANZ DE VOS ALBRECHT**



### **QUALIFICATIONS:**

BSc Hons Biochemistry (University of the Witwatersrand) 1964

PhD Biochemistry (University of the Witwatersrand) 1970

### **PRESENT POSITION :**

Past Head of Research of the Cancer Association of South Africa (CANSA) 2007-2015

Research Associate, Department of Biochemistry, University of Stellenbosch

Consultant Forensic Analytical Chemistry

### **DATE AND PLACE OF BIRTH:**

23rd April 1943. Johannesburg, South Africa

### **NATIONALITY:**

South African

### **PERSONAL:**

Married Sybella Joubert in 1969. Sybel is a qualified investigative journalist who works freelance. We have three children: Marguerite, born 17/5/73; Elizabeth (28/7/74) and Carl jr (24/2/77).

### **CONTACT FOR CORRESPONDENCE**

**E-mail:** [calbrec@iafrica.com](mailto:calbrec@iafrica.com)

**Website:** [www.drcarlalbrecht.com](http://www.drcarlalbrecht.com)

**Physical Address:** 41 JS Maraisstreet, Palmiet, Kleinmond, 7195, South Africa

**EDUCATION AND APPOINTMENTS:**

1960	Matriculated at Helpmekaar Boys High School in Johannesburg; Class A with distinctions in Biology, Mathematics and Science. Prize for best science student.
1964	BSc Hons graduate at University of the Witwatersrand with Biochemistry as major subject.
1968	Appointed Research Officer in the National Chemical Research Laboratory of the Council for Scientific and Industrial Research (C.S.I.R.) in Pretoria.
1969	Post-doctoral research fellow at the Molecular Anatomy Program, Oak Ridge National Laboratory, Tennessee, USA
1970	PhD graduate at University of the Witwatersrand
1971	Senior research officer at C.S.I.R.
1975	Appointed senior lecturer and medical scientist in the Department of Pharmacology, Stellenbosch University Medical School.
1993	Promoted to highest level as Chief Specialist Medical Scientist and Senior lecturer.
1996	Early retirement
1997	Medical Research Consultant
2007 – 2015	Head of Research for CANSA
2015	Research Associate, Department of Biochemistry, Stellenbosch University

**AWARDS:**

- Received prize for best group research project, Annual Academic Research Day, Faculty of Medicine, University of Stellenbosch, 1982.
- Certificate of merit from the South African Association for the Advancement of Science, 1983.
- Prize for the best project published during 1990 awarded by the Society of Medical Scientists, Tygerberg Branch.

- Prize for the best presentation of research by a senior scientist at the South African Nutrition Conference in Pretoria 1992.
- Mariette Loots Cancer Winner Merit Award 1992
- Invited to take part in a Symposium by the Nobel Forum, Stockholm, Sweden, 1996
- Certificates of Merit Gold Class –CANSAs 1997, 1998.
- Invited to be Africa representative on International Affairs Committee of AACR (American Association for Cancer Research), 2005
- Invited to take part in a Symposium on Colon Cancer by the Nobel Forum, Stockholm, Sweden, 1996
- A.G. Oettle Memorial Medal Award twice, 2007 and 2009 for significant contributions to the fight against cancer in South Africa
- Invited to address World Tea Expo on Medicinal Properties of Rooibos tea. 2010
- Invited to partake in a special closed conference on health promotion at Ancient Olympia, Greece, 2010

#### **MEMBERSHIP OF SOCIETIES AND PROFESSIONAL ASSOCIATIONS:**

Experimental Biology Group Western Cape

Biochemistry Society of Southern Africa

South African Pharmacology Association

Royal Society of South Africa

South African Association for the Advancement of Science

#### **POSITIONS ON COMMITTEES AND BOARDS:**

University Science Students Association of South Africa, founder/first chairman

Science Student's Council, University of the Witwatersrand, chairman

Student's Representative Council, University of the Witwatersrand, member

Experimental Biology Group, chairman

Biochemistry Society of South Africa, executive member 1976-1978, 1982-1984.

Society of Medical Scientists, vice-chairman 1990.

South African Association for the Advancement of Science, vice president 1980-present

Foundation for Research Development sponsored Indigenous Plant Use Forum, chairman 1992-1996.

Cancer Association of South Africa Western Cape Region, chairman 1992-1996.

Cancer Association of South Africa Research Committee, member 1980-present

Cancer Association of South Africa National Executive member 1993-1997.

Cape Provincial Education Council, member 1990-1993

Department of Health, Essential Drugs List, Reference Centre for Traditional Medicine, chairman of the Claims Committee, 1998- present

Foundation for Research Development, Evaluation Committee, University of the Transkei Research projects; 1997

Association of Medical Scientists

CARISA Steering Committee 2004 – 2014

CANSA ROC 2007-2015

CANSA RESCOM 1982-2015

### **TEACHING EXPERIENCE:**

Most of my teaching has been for 3rd year MBChB students and has covered the topic of chemotherapy, i.e. antibiotics; anti-virals; anti-fungals; anti-protosoals; anti-helmintics and anti-cancer drugs. The course focuses on mode of action; toxicology and pharmacokinetics. Similar more advanced lectures are also given at BSc Honours level. I have also given numerous lectures on diet and cancer. I have also been involved as supervisor for M.Sc students of which there have been 6 and I was co-supervisor for one PhD student. I have been teaching for 24 years.

**RESEARCH EXPERIENCE:**

I have been involved with the following projects which have been funded by the Cancer Association of South Africa; the Council for Scientific and Industrial Research, the Medical Research Council, the Foundation for Research Development and Essential Sterolin Products Pty. Ltd.

**The main themes have been:**

1. Molecular basis of cancer
2. Identification of unknown metabolites in human urine
3. Evaluation of efficacy and toxicity of extracts of indigenous medicinal plants.
4. Detection, isolation and characterization of carcinogens in the environment
5. Endorsement of existing products that may reduce the risk of cancer
6. Analysis of molecules that may cause the fairy Circles in Namibia

**Projects:**

- Fractionation of isolated nuclei using sucrose gradients
- Molecular mechanisms involved in azo-dye carcinogenesis in the rat
- Establishment of a transplantable rat hepatoma
- Comparative molecular studies of rat liver and hepatoma
- Two-dimensional electrophoresis of proteins released by tumour cells in tissue culture
- Matrix proteins in rat liver and hepatoma
- Dormancy factors released by mouse melanoma cells
- Identification of 3-hydroxy-3-methylindole in human urine
- Identification of 8-hydroxy carbostyrils in human urine
- Evaluation of extracts of the corms of *Hypoxis rooperi* as a possible anti-cancer treatment
- Evaluation of plant sitosterols as possible immuno-stimulators
- Evaluation of extracts of *Sutherlandia microphylla* as possible anti-inflammatory and anti-cancer treatments

**RESEARCH HIGHLIGHTS:**

First to fractionate nuclei using a sucrose gradient

First to show protein differences in nuclear RNP particles from normal and cancer cells

First to induce transplantable hepatoma in BDIX rats

First to discover 3-methyl oxindole in human urine

First to show effect of magnetism on quantity of intra-cisternal A-particles in murine tumour in vivo

First to test *Hypoxis rooperi* extract in ethically approved clinical trials for anti-cancer activity

Actively support research on *Sutherlandia*.

#### **ATTENDANCE AT INTERNATIONAL CONFERENCES:**

- 1970 International Cancer Conference, Houston, Texas, USA
- 1978 International Cancer Conference, Beunos Aires, Argentina
- 1987 10th International Pharmacology Conference, Sydney, Australia
- 1993 International Nutrition and Colon Cancer Conference, Auckland, New Zealand
- 1995 Utilization of Tropical Plants and Conservation of Biodiversity, Douala, Cameroon (Invited speaker)
- 1996 Chemistry, biological and pharmacological properties of African medicinal plants, Victoria Falls, Zimbabwe
- 1996 Colorectal Neoplasia – Morphological, Clinical and Molecular Genetic Aspects, Frontiers of Medicine, Nobel Forum, Karolinska Institute, Stockholm, Sweden (Invited speaker)
- 2002 First International Conference on the Prevention of Cancer, Boston, USA (CANSA delegate)
- 2010 WORLD TEA EXPO Invited to talk on phytochemistry of Rooibos Tea-Las Vegas
- 2010 Cancer and Obesity Invited to talk on Epigenetics ,cancer and obesity. Valencia, Spain.
- 2011 AORTIC Conference Invited to talk on Environment and Cancer, Cairo, Egypt

## EXPERIENCE IN TECHNOLOGY TRANSFER:

**Co-ordinator** of a multi-disciplinary and multi-departmental, laboratory and clinical research project to evaluate an extract of the South African, indigenous, putative medicinal plant, *Hypoxis rooperi* as putative anti-cancer treatment. Contract project for Essential Sterolin Products Pty Ltd. involving, inter alia, the conceptualization, formalization and execution of 11 ethically approved clinical trials. The eventual outcome was a lack of proof of efficacy and indications of moderate lymphopaenia. (1987-1997)

**Co-ordinator** of 72 research projects conducted by 65 South African researchers with funds allocated by the Cancer Association of South Africa over a period of ten years.

## PUBLICATIONS:

1. **44 peer reviewed papers** in journals referenced by Medline on <http://www3.ncbi.nlm.nih.gov/Entrez/medline.html> using **Albrecht CF** as search term
2. **One article in book:** "Hypoxoside: a putative, non-toxic prodrug for possible treatment of certain malignancies, HIV-infection and inflammatory conditions" in Chemistry, Biological and Pharmacological properties of African medicinal plants, Eds: K. Hostettmann, F. Chinyanganya, M. Maillard and J.-L. Wolfender, University of Zimbabwe Publications, Harare, Zimbabwe, pp303-308, 1996
3. **One Book ; " Beginsels van Chemoterapie "**, Academia, Pretoria 1988
4. **Three US Patents** : (See copies of print-outs from <http://patents.uspo.gov>
  - Method and compositions for modulating or control of immune responses in humans –5,486,510
  - Anti-inflammatory treatment method – 5,569,649
  - Method for treating viral infections – 5,609,874

## Peer reviewed papers :

1. ***The importance of cybernetics in the origin, nature and synthesis of life,*** Albrecht CF, S.A. J.Sci., **63** , 285-290, 1967.
2. ***The fractionation of rat liver nuclei using sucrose gradient centrifugation,*** Albrecht CF, Exptl Cell res., **49** , 373-379, 1968.
3. ***Fractionation of nuclei from induced hepatomas by sucrose gradient centrifugation*** , Albrecht CF, Exptl cell Res., **56** , 44-48, 1969.
4. ***The ultrastructure of a transplantable rat hepatoma induced by 3'-methyl-4-dimethylaminoazobenzene*** , Albrecht CF, Liebenberg N, Theron JJ, S A J Med Sci, **37** , 91-94, 1972.
5. ***Enzymes of carbohydrate metabolism in rat hepatoma induced by 3'-methyl-aminoazobenze*** , Balinsky D, Cayanis E, Albrecht C and Bersohn I, S A J Med Sci, **37** , 95-99,1972.

6. ***A comparative study of the protein components of ribonucleoprotein particles isolated from rat liver and hepatoma nuclei*** , Albrecht CF and Van Zyl I, Exptl cell Res, **76** , 8-14, 1973.
7. ***Zinc intake and growth of a transplanted hepatoma induced by 3'-methyl-4'-dimethylaminoazobenzene*** , Duncan JR, Dreosti IE and Albrecht CF, J Natl Cancer Inst, **53** , 277-278, 1974.
8. ***Some characteristics of a cell line derived from a fast growing rat hepatoma*** , Albrecht CF, Liebenberg N, Nourse L and Seegers J, S A J Med, **40** , 35-42, 1975.
9. ***The biosynthesis of thyroid hormones***, Van Jaarsveld PP, Albrecht CF, Theron CN, and Van Zyl A, S A J Sci, **41** , 165-189, 1976.
10. ***Afrikander cattle congenital goitre: Characteristics of its morphology and iodoprotein pattern*** , Pammenter M, Albrecht CF, Liebenberg N and Van Jaarsveld PP, Endocrinology, **102** , 954-965, 1978.
11. ***The induction and transplantation of hepatomas in Wistar and BD IX rats***, Albrecht CF and Dijkstra J, S A Vet Ass, **49** , 247-248, 1978.
12. ***Isozyme studies of several enzymes of carbohydrate metabolism in rat hepatomas and hepatoma cells***, Hammond KD, Balinsky D and Albrecht CF, S A J Sci, **75** , 123-124, 1979.
13. ***Multi-elemental X-ray analysis of normal and malignant mammalian tissue by proton excitation of thick samples in air*** , Renan MJ, Albrecht CF and Jones DTL, Nuclear Instruments and Methods, **181** , 297-300, 1981.
14. ***Influence of neoplasia on zinc and copper levels in murine liver cells***, Renan MJ, Albrecht CF and Jones DTL, J Radioanalytical Chem, **70** , 9-19, 1982.
15. ***The specific binding of the thyroid hormones to matrix isolated from rat liver nuclei*** , Wilson BD, Albrecht CF and Wium C, S A Med J, **61** , 44-49, 1982.
16. ***Sodium valproate poisoning: A case report***, Van der Merwe AC, Albrecht CF, Brink MS and Coetzee AR, S A Med J, **67** , 735-736, 1985.
17. ***Smoking, oncogenes and human lung cancer: A review of recent laboratory evidence linking smoking and lung cancer*** , Albrecht CF and Theron E, S A Med J, **73** , 406-408, 1988.
18. ***Nicotine gum and psychological support in smoking cessation: A pilot study in the South African context***, Baddeley GM, Schomer HH and Albrecht CF, S A Med J, **73** , 402-405, 1988.
19. ***Cross contamination of human esophageal squamous carcinoma cell lines detected by DNA-fingerprint analysis*** , Van Helden P, Wiid IJF, Albrecht CF, Theron E, Thornley AL and Hoal-Van Helden EG, Cancer Res, **48** , 5660-5662, 1988.
20. ***Detection of 3-hydroxy-3-methyl-indole in human urine***, Albrecht CF, Chorn DJ and Wessels PL, Life Sciences, **45** , 1119-1126, 1989.



21. ***Theoretical and experimental considerations linking an environmental stress to expression of endogenous retroviruses in a mammalian tumour***, Albrecht CF, Szeinfeld, Olivier A and Wynchank S, *Med Hypotheses*, **32**, 101-105, 1990.
22. ***Isolation and structure elucidation of Xanthotoxin, a phototoxic furanocoumarin from Peucedanum galbanum***, Finkelstein N, Albrecht CF and Van Jaarsveld PP, *S A J Bot*, **59**, 81-82, 1993
23. ***Use of guanidine hydrochloride and ammonium sulfate in comprehensive in-line sorption enrichment of xenobiotics in biological fluids by high performance liquid chromatography***, Kruger PB, Albrecht CF and Van Jaarsveld PP, *J Chromatogr*, **612**, 191-198, 1993.
24. ***B-glucosidase activity in fetal bovine serum renders the plant glucoside, hypoxoside, cytotoxic towards B16-F10-BL6 mouse melanoma cells***, Theron EJ, Albrecht CF, Kruger PB, Jenkins K and Van der Merwe MJ, *In Vitro Cell Dev Biol Anim*, **30**, 115-119, 1994.
25. ***Studies on hypoxoside and rooperol analogues from Hypxis rooperi and Hypxis latifolia and their biotransformation in man by using high-performance liquid chromatography with in-line sorption enrichment and diode-array detection***, Kruger PB, Albrecht CF, Liebenberg RW and Van Jaarsveld PP, *J Chromatogr B Biomed Appl*, **662**, 71-78, 1994.
26. ***Morphological characterisation of the cell growth inhibitory activity of rooperol and pharmacokinetic aspects of hypoxoside as an oral prodrug for cancer therapy***, Albrecht CF, Theron EJ and Kruger PB, *S Afr Med J*, **85**, 853-860, 1995.
27. ***The pharmacokinetic behaviour of hypoxoside taken orally by patients with lung cancer in a phase I trial***, Albrecht CF, Kruger PB, Smit BJ, Freestone M, Gouws L, Miller R and Van Jaarsveld PP, *S Afr Med J*, **85**, 861-865, 1995.
28. ***A phase I trial of hypoxoside as an oral prodrug for cancer therapy- absence of toxicity***, Smit BJ, Albrecht CF, Liebenberg RW, Kruger PB, Freestone M, Gouws L, Theron E, Bouic PJ, Etsebeth and Van Jaarsveld PP, *S Afr Med J*, **85**, 865-870, 1995.
29. ***Rifampicin for ulcerative colitis***, Schoonees R and Albrecht CF, *S Afr Med J*, **86**, 97-98, 1996.
30. ***Pharmacokinetic behaviour and cardiovascular effects of intravenously administered hypoxoside and rooperol***, Coetzee JF, Kruger PB, Albrecht CF, Jahed N and Van Jaarsveld PP, *Arzneimittelforschung*, **46**, 997-1000, 1996.
31. ***Beta-sitosterol and beta-sitosterol glucoside stimulate human peripheral blood lymphocyte proliferation: implications for their use as an immunomodulatory vitamin combination***, Bouic PJ, Albrecht CF and Van Jaarsveld PP, *Int J Immunopharmacol*, **18**, 693-700, 1996.
32. ***A randomized placebo-controlled trial of the efficacy of beta-sitosterol and its glucoside as adjuvants in the treatment of pulmonary tuberculosis***, Donald PR, Lamprecht JH, Freestone M, Albrecht CF, Bouic PJ, Kotze D, van Jaarsveld PP, *Int J Tuberc Lung Dis*, **1**, 518-522, 1997.

33. **Cytotoxic and antimalarial alkaloids from *Brunsvigia littoralis***, Campbell WE, Nair JJ, Gammon DW, Bastida J, Codina C, Viladomat F, Smith PJ and Albrecht CF, *Planta Med*, **64**, 91-93, 1998.
34. **Triterpenoid saponins from *Becium grandiflorum* var. *obovatum***, Burger I, Burger BV, Albrecht CF, Spies HS and Sandor P, *Phytochem*, **49**, 2087-2095, 1998.
35. **Origin of the enigmatic, circular, barren patches (:Fairy Rings") of the pro-Namib**, Albrecht C.F., Joubert J.J. and De Rycke P.H., *South African J of Sci.*, **97**, 23-27, 2001.
36. **Effect of rooperol on collagen synthesis and cell growth**, Dietzsch E, Albrecht CF, Parker MI, *IUBMB Life*, **48**, 321-325, 1999.
37. **Erythropoietin production in anemia associated with experimental cancer**, Leng HM, Albrecht CF, Kidson SH, Folb PI, *Exp Hematol.*, **27**, 806-810, 1999.
38. **Bioactive alkaloids from *Brunsvigia radulosa***, Campbell WE, Nair JJ, Gammon DW, Codina C, Bastida J, Viladomat F, Smith PJ, *Phytochemistry*, **53**, 587-591, 2000.
39. **The antioxidant potential of *Sutherlandia frutescens***, Fernandes AC, Cromarty AD, Albrecht C, van Rensburg CE, *J Ethnopharmacol.*, **95**, 1-5, 2004.
40. **Influence of *Sutherlandia frutescens* extracts on cell numbers, morphology and gene expression in MCF-7 cells**, Stander BA, Marais S, Steynberg TJ, Theron D, Joubert F, Albrecht C, Joubert AM, *J Ethnopharmacol*, **112**, 312-318, 2007.
41. **A review of the taxonomy, ethnobotany, chemistry and pharmacology of *Sutherlandia frutescens* (Fabaceae)**, van Wyk BE, Albrecht C, *J Ethnopharmacol*, **119**, 620-629, 2008.
42. **In vitro effects of *Sutherlandia frutescens* water extracts on cell numbers, morphology, cell cycle progression and cell death in a tumorigenic and non-tumorigenic epithelial breast cell line**, Stander A, Marais S, Stivaktas V, Vorster C, Albrecht C, Lottering ML, Joubert AM, *J Ethnopharmacol*, **124**, 45-60, 2009.
43. **A bibliometric analysis of research publications funded partially by the Cancer Association of South Africa (CANSA) during a 10-year period (1994-2003)**, Albrecht C, *SA Family Practise*, **51**, 2009.
44. **LC-MS based metabolomics assists with quality assesment and traceability of wild and cultivated plants of *Sutherlandia frutescens* (Fabceae)**, Albrecht CF, Stander MA, Grobbelaar MC, Colling J, Kossmann J, Hills PN and Makunga NP, *South African Journal of Botany*, **82**, 33-45, 2012.
45. **South African seed oils are safe for human consumption**. Opperman M, Benade AJS, Albrecht CF, Matsheka LL, *S Afr J Clin Nutr.* **29**(1): 7-17, 2016 .