EuroSciCon

DAY 1

KeynoteForum

15th International Conference on

Immunology

July 05-07, 2018 Vienna, Austria

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Wassil Nowicky, Insights Allergy Asthma Bronchitis 2018, Volume: 4
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IMMUNOMODULATING PROPERTIES OF THE ANTI-CANCER PROTON PREPARATION ON BASIS OF GREATER CELANDINE ALKALOIDS NSC-631570 (UKRAIN)

Wassil Nowicky

Nowicky Pharma/ Ukrainian Anti-Cancer Institute, Austria

One of the most significant problems of cancer therapy is the damaging activity of anticancer drugs against normal body cells. All attempts to develop a therapeutic agent with a selective cytotoxic effect on tumor cells had no much success because of the high degree of biological identity between healthy and malignant cells. The celandine is being used in the medicine over more than 3500 years. The first data concerning the therapeutic effect of the juice of celandine in the patient with malignant melanoma were published in Germany in 1536. From that time drugs based on biologically active substances of celandine are widely used to treat cancer and non-cancer disease. It is well known that tumor cell is more negatively charged as compared to normal cell. We have used this feature of the tumor cell to give NSC-631570 a property to selectively interact with it, without endangering healthy cells and tissues. The drug is strongly positively charged. Due to this it has an ability to be selectively accumulated in tumor tissue and to induce tumor cell apoptosis only in tumor cells without harmful effect on normal cells. The potent selective antitumor effect of NSC-631570 was repeatedly proven by the results of clinical trials. Until now this preparation has been tested on over 100 cancer cell lines and on 12 normal cell lines and the results of the studies carried out in more than 120 universities and research centers (in particular at the National Cancer Institute (the USA)) have shown that the NSC-631570 killed only cancer cells without having damaged the normal cells what confirmed its selective effect.

Biography

Wassil Nowicky, Director of Nowicky Pharma and President of the Ukrainian Anti-Cancer Institute (Vienna, Austria). He has finished his study at the Radiotechnical Faculty of the Technical University of Lviv (Ukraine) by the end of 1955 with graduation to Diplomingeniueur in 1960 whose title was nostrificated in Austria in 1975. He is the author of over 300 scientific articles dedicated to cancer research. He is a real member of the New York Academy of Sciences, member of the European Union for applied immunology and of the American Association for scientific progress, Doctor honoris causa of the Open international university on complex medicine in Colombo, honorary member of the Austrian Society of a name od Albert Schweizer. He has received the award for merits of National guild of pharmasists of America, the award of Austrian Society of sanitary, hygiene and public health services and others.

dr.nowicky@yahoo.de

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William N Sokol, Insights Allergy Asthma Bronchitis 2018, Volume: 4
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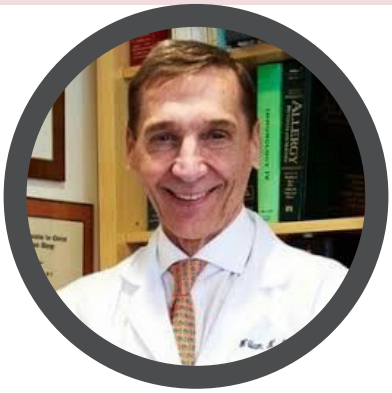
ANAPHYLAXIS AFTER FIRST INGESTION OF CHAPULINES (GRASSHOPPER) IN PATIENTS ALLERGIC TO HOUSE DUST MITE, COCKROACH, AND CRUSTACEANS, IS TROPOMYOSIN THE CAUSE?



William N Sokol

University of California, California, USA

Two patients presented with a history of anaphylaxis (one with loss of consciousness, the other with laryngeal edema, urticaria, angioedema, and near syncope) immediately after eating chapuline from Oaxaca, Mexico. Prick puncture testing to grasshopper antigen was 4+ in both patients and negative in five non-allergic controls. Both patients gave a prior history of urticaria/angioedema/laryngeal edema following ingestion of crustaceans. *In vitro* IgE specific antibodies to crustaceans, dust mites, and cockroach were positive in both patients. Total IgE was greater than 2000 IU/mL in one patient, and 92.6 IU/mL in the other (nl<87 IU/mL). Tryptase levels in both patients were not elevated. Specific IgE inhibition studies reveal that grasshopper extract contains antigens capable of binding to patient's specific IgE to crustaceans, cockroach, and mites, indicating the presence of a cross reacting pan-allergen in grasshopper extract. Immunoblot analysis of the grasshopper extract revealed the presence of a 30 kD molecular weight protein in grasshopper and chapuline and a 38 kD molecular weight protein in shrimp, which bound patient-specific IgE antibody. Western Blot analysis of the extract probed with anti-tropomyosin antibody revealed those antigens to be tropomyosin. Although previous reports in the literature of allergic rhinoconjunctivitis, contact urticaria, and asthma after inhalation of grasshopper are well known, this is the first well-documented report of anaphylaxis following ingestion of grasshoppers. Ingestion of insects is very popular in Asia, the Middle East, South and Central America, and particularly in Mexico and in Southern California. The purpose of this report is to alert the medical community and the public to the fact that there is an increased risk of allergic reactions to the ingestion of grasshoppers in patients with a prior history of crustacean, house dust mite, and/or cockroach allergy.

Biography

William N Sokol was a board certified Internist (Northwestern) and Allergist (UCLA). He completed Undergraduation (BA) from Ohio State University (AED pre-Med honorary). Ohio State College of Medicine (Landacre research society award). He joined the clinical faculty of the division of Allergy at the University of California at Irvine immediately after his fellowship and currently a Clinical Professor of Immunology and Allergy at U C I where he give the basic immunology lectures to Medical Students and supervise training of Allergy fellows, including guiding their research efforts. His fields of interest have included basic research on β-adrenergic cell membrane receptors which resulted in several papers which contributed in part to the refutation of the β-blockade theory of the origin of asthma. Subsequent interests involved the descriptions of a several new causes of occupational asthma and clinical research on bacterial sinusitis, asthma, rhinitis and several new causes of anaphylaxis. He has published over 50 articles in the peer reviewed medical literature. His most recent work is on the description of a 30 kD tropomyosin found in a type of grasshopper called chapulines which are commonly ingested in Mexico and the USA. This dietary peculiarity is causing allergic reactions including anaphylaxis in unsuspected patients with underlying crustacean HDM and cockroach allergy.

wsokolallergy@aol.com

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Michel Leclerc, Insights Allergy Asthma Bronchitis 2018, Volume: 4
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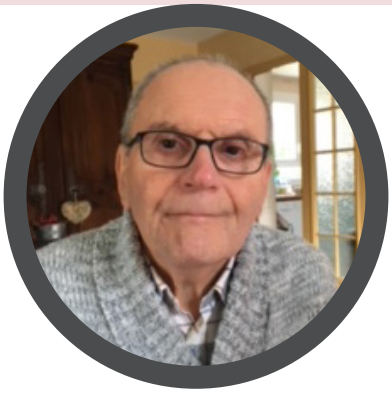
SEA STAR IMMUNOLOGY: 50 YEARS OF BUSY RESEARCH ACTIVITIES

Michel Leclerc
Orléans University, France

The main point of the sea star immunology remains the discovery of the invertebrate primitive antibody (IPA) of the sea star, the Ig kappa gene, with 2 Ig sites which implies the sea star complement system. To be initiated, 9 component genes from C1 to C9 have been updated these last years and IRF2, IRF4, IRF8 genes which play a fundamental rôle in the sea star immune response, have been discovered, for the first time, in an invertebrate. Evidences of Fc receptor gene, Fab gene and Cr gene corroborate the presence of IPA. Mostly, IL2 is linked to T vertebrate lymphocytes. On the other hand, an IL2 activity was demonstrated in sea star (Echinodermata) but was not found in sea star genome. Recently after hard research, it was discovered that in the first sister of the sea star Asterias rubens: the ophuirid: Ophiocomina nigra. The aim of this paper is to present the IL2 sequence in the ophuirid we just studied as it is demonstrated in sea star (Echinodermata) but was not found in sea star genome.



Biography

Dr Michel Leclerc was born the 31th of January 1941 at Saint Benoit sur Loire (France) He obtained his Master in Biological Sciences at the University of Orléans. He possessed a "D.E.S in Biology" and then a"Doctorat ès Sciences" in 1977 in this last University. Later he collaborated to the Institut Pasteur of Paris as a co-researcher for five years and then directed the laboratory of Immunology of Invertebrates, in the University of Orléans. He has been the first to culture invertebrate cells"*in vitro*" and more particurlaly sea star lymphocytes. In 1975 he spoke already in a paper at the Science Academy of France of Invertebrate antibody, in a world Where this last notion was" forbidden"! Again he is the first to immunize sea stars with various antigens. In the years 1980 he published a papet at Eur.J.Immunol with Francis Delmotte et al, about the isolation and purification of Antibody-like substances in the sea star Asterias rubens.Then the last period comes with the genomics: He discovered the sea star IGKappa gene (2014) with 2 Ig sites. It is the first time we can speak of IAP (Invertebrate Primitive Antibody). So the Fab gene, the Fc receptor gene, the Cr gene. Besides the sea star Innate response, he spoke of ADAPTATIVE IMMUNITY in an Invertebrate for the first time. With 170 international publications, he said: "What is wrong yesterday is true to-day".

mleclerc45@gmail.com

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Yaffa Mizrachi Nebenzah, Insights Allergy Asthma Bronchitis 2018, Volume: 4
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NOVEL *STREPTOCOCCUS PNEUMONIAE* PROTEIN ANTIGEN VACCINE AND THE NATURE OF THE IMMUNE RESPONSE ELICITED BY THEM

Yaffa Mizrachi Nebenzah
Ben Gurion University of the Negev, Israel

Mortality due to pneumococcal infections remains high worldwide, augmented by widespread antibiotic resistance in many pneumococcal strains. To identify protein antigens that may be involved in the development of protective immunity to S. *pneumoniae*, a pneumococcal cell wall protein-enriched extract was screened using 2-D gel electrophoresis and immunoblotting with sera obtained longitudinally from children attending day-care centers and sera obtained from mice immunized with the pneumococcal cell wall protein-enriched extract. The identified proteins that share no- or low- homology to human proteins and that are conserved among different S. *pneumoniae* strains were tested for their ability to elicit protection against S. *pneumoniae* challenge in animal models. Moreover the nature of the elicited immune response was studied in mice. S. *pneumoniae* proteins PtsA, GtS, Nox, FlaR, FBA, TF and PTS^{MAN} were amplified from TIGR4 strain, cloned, expressed and purified. Mice were immunized three times subcutaneously with these proteins in the presence of adjuvant and challenged two weeks later. Nasopharyngeal and lung colonization levels were quantified 48 hrs following bacterial challenge or survival was monitored daily for seven days following challenge. The cytokine profile elicited by rFBA was determined by multiplex ELISA. All seven proteins elicited protective immune responses in mice as determined by reduced nasopharyngeal and lung colonization, prolonged survival, and the ability of antibodies obtained from immunized mice to ex-vivo neutralize bacterial pathogenicity in the intraperitoneal challenge model. Moreover, rFBA elicits Th1/Th2/Th17-type cytokines in mice. Immunization with immunogenic proteins elicits protective immune responses in mouse challenge systems and the induction of Th1, Th2 and Th17 type of immune responses. Taken together several antigenic and immunogenic protein with no or low homology to human protein are were identified and found to elicit protective immune response in the mouse model accompanied by Th1, Th2 and Th17 type protective immune responses.

Biography

Yaffa Mizrachi Nebenzahl has completed her PhD at The Weizmann Institute, Rehovot Israel and Postdoctoral studies at NIH, USA and UCLA School of Medicine. She is the Director of Molecular Microbiology laboratory in the Shraga Segal Department of Microbiology, Immunology and Genetics at the Faculty of Health Sciences in Ben Gurion University of the Negev, Beer Sheva, Israel. She has published more than 65 papers in reputed journals.

ymizr@bgu.ac.il

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Gilbert Glady, Insights Allergy Asthma Bronchitis 2018, Volume: 4
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THERAPEUTIC USE OF MICRORNAS IN DIFFERENT TYPES OF IMMUNE DISEASES

Gilbert Glady
European Bio Immune(G)ene Medicine Association, France

MicroRNAs (miRNAs) constitute a biologically very important class of small, noncoding RNAs, about 18–22 nucleotides (nt) long, that mainly act as negative regulators of gene expression at posttranscriptional level by controlling the translation and stability of mRNA target. It is known that a miRNA may target several mRNAs as well as the mRNA that can be under the control of several miRNAs. The dysregulation of miRNAs has been frequently observed in different types of disease, including cancer, autoimmune driven diseases, many allergies, metabolic pathologies. All these data make it possible to identify microRNAs as almost ideal targets for human therapeutics. In spite of numerous attempts in this direction, many therapeutic trials have finally failed due to methodological difficulties sometimes, but mainly because of insurmountable adverse effects. In recent years, we have developed a nanotherapy using ultra-low doses of microRNAs (concentrations are of the order of the nanogram) administered sub-lingually, which we called Bio Immune(G)ene Medicine, and which allows to use microRNAs for therapeutic purposes without particular difficulty. A number of clinical examples should illustrate the methodology used and highlight the therapeutic efficacy of this highly innovative new medical approach of multiple chronic diseases.

Biography

Gilbert Glady Born in Strasbourg, France, Dr. Gilbert Glady graduated from Medical School in 1977 and was then an intern in onco-hematology at the university clinic for several years. After a specialization in homeopathy and naturopathy in Paris, he returned to the Alsace region to work as a private practitioner. Through his work and encounters, he developed interest and expertise in immunology and immunogenetics, that leaded him to nanomedicine and nanobiotechnology. He thus became in 2010 the creator of the BI(G)MED method (Bio Immune (G)ene Medicine) and director of EBMA, the European association responsible for communication and trainings in the field of BI(G) MED. He has participated in numerous international congresses in immuno-allergology, infectiology and oncology with posters and oral presentations, and is the author of several publications on nanobiotherapy in different journals.

info@ebma-europe.com

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Byoung S Kwon, Insights Allergy Asthma Bronchitis 2018, Volume: 4
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4-1BB-BASED ADOPTIVE T CELL THERAPY

Byoung S Kwon
Eutilex Co. Ltd, Korea

Adoptive T cell therapy has been proven to be a promising approach to the selected cases of cancer therapy. We, however, still need a simple and standardized procedure for producing cancer-specific CD8+ T cells that is generally applicable to most cancers. Based on a unique property of 4-1BB (CD137), the selective expression of 4-1BB on Ag-engaged T cells, we have developed a practical protocol to produce antigen-specific $CD8^+$ T cells from peripheral blood mononuclear cells (PBMCs). We have proven the feasibility of this procedure by isolating and expanding cytomegalovirus (CMV)-specific $CD8^+$ T cells, and applied to produce Epstein-Barr virus (EBV)-specific $CD8^+$ T cells. Moreover, our protocol allowed us to produce $CD8^+$ T cells from cancer patients that were specific for self/tumor antigens such as hTERT, WT-1, NY-ESO1 and MAGE3 and for neo-antigens. Our protocol can readily be translated into standard cGMP and is being used to produce EBV-, hTERT-, and WT-1-specific $CD8^+$ T cells for phase 1 clinical trials. Among EBV-positive lymphomas, approximately 62% of patients responded to the 4-1BB CTL therapy including a durable complete regression of 2/2 NK/T lymphomas with no or minimum toxicity in all patients. We believe that the 4-1BB CTL will provide a practical and effective method for adoptive T cell therapy in the clinic.

Biography

Byoung S Kwon has his PhD from the Georgia Regents University, in 1981 and Postdoctoral studies at the Department of Human Genetics, Yale University from 1981 to 1984. He was a tenured Professor of the Indiana University School of Medicine, a Professor and Director of the Immunomodulation Research Center at the University of Ulsan, a Distinguished Professor and Investigator at the National Cancer Center, Korea, and Professor at the Department of Medicine Tulane University, New Orleans LA. He is currently the Founder and CEO of Eutilex who is developing T cell therapeutics and immunomodulatory antibody therapeutics. He has published over 300 peer-reviewed papers and has been serving as an Editorial Member of reputable journals.

bskwon@eutilex.com

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Nataliya M Kushnir, Insights Allergy Asthma Bronchitis 2018, Volume: 4
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NOVEL LINK BETWEEN INDOOR ALLERGEN EXPOSURE AND NEUROIMMUNE DEVELOPMENT IN CHILDREN

Nataliya M Kushnir[1,2]

[1]Institute of Integrative Immunology, California
[2]UCSF Benioff Children's Hospital, USA

Recently more attention is drawn toward preventable causes of asthma epidemics worldwide. Indoor exposure to unhealthy living conditions is currently reviewed as one of the significant factors driving allergic phenotype switch in multicentre collaborative research protocols involving many countries. Asthma and allergies link with indoor dampness and allergen exposure in children is well established. The proposed mechanism involves activation of developing immune system and switch toward TH-2 responses. We report 3 unrelated cases of the children with confirmed sensitisation to the mold and dust mite species, who also developed neuroimmune complications that presented as atypical seizures and behavioural changes. We conclude that previously reported abnormal immune response in children exposed to water damaged buildings may be directly involved in early brain development and atypical seizures. This report provides novel opportunities in treatment of children who develop allergic sensitization and neurological issues. More research is needed to evaluate specific mechanisms involved in early immune system development and interaction of sensitized immune cells with neuroglia and brain development.

Biography

Kushnir received her MD degree from Voronezh Medical Academy, Russia in 1994. She received full certification as a Medical Doctor in the United States and Board Certification as an Immunologist and Allergist. She conducted extensive studies on neuroimmunology at the National Institutes of Health, Maryland, US. Her work resulted in discovery of a ground-breaking connection between serotonin mediator and immune mast cells. She is the first author of multiple abstracts and publications in the top peer-review journals. She is an internationally distinguished speaker, an educator, and mentor for medical students at USCF Children's hospital, California, US, and an advocate of natural treatments for immune disorders. She is also a Master of Tibetan Medicine, and currently conducting ground-breaking research on integrative approaches of Chinese and Modern medicines. She is a founder and Medical Director of Institute of Integrative Immunology in Berkeley, CA.

nataliya.kushnir.md@gmail.com

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Edward P Cohen et al., Insights Allergy Asthma Bronchitis 2018, Volume: 4
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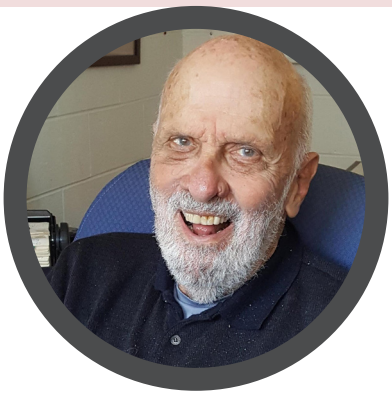
NEW STRATEGY FOR THE IDENTIFICATION OF TUMOR-ASSOCIATED ANTIGENS THAT INDUCE THERAPEUTIC IMMUNE RESPONSES IN TUMOR-BEARING MICE



Edward P Cohen, Tae Sung Kim and Amla Chopra
University of Illinois, Illinois

We describe a unique strategy designed to identify dominant tumour antigens. The antigen-discovery strategy is based on the finding that genes encoding dominant tumour antigens (TAA) are expressed in a highly immunogenic form by an allogeneic fibroblast cell line transfected with DNA from cancer cells. As the transfected cells, express the products of multiple genes specifying an array of tumour antigens, cells expressing genes specifying dominant tumor antigens that induced therapeutic immune responses were identified for antigen discovery. As only a small proportion of the transfected cell population was expected to have incorporated gene-segments that specified TAA, a unique strategy was developed that resulted in the identification of Cyp2e1, a derivative of cytochrome p450, as an immune dominant tumor antigen in lung cancer cells and growth factor receptor bound protein 10 (GRB10) as an immune dominant tumor antigen in breast cancer cells. The strategy consisted of dividing aliquots of the suspension of transfected cells into 10-15 small pools (initial inoculums 10E3) allowing the cells from each pool to increase in number (to approximately 10E7) and then dividing the transfected cell-populations from each pool into two portions. The cells in the pool that induced immunity to lung cancer to the greatest (and as a control) to the least extent were maintained frozen/viable for later recovery. The remaining portion was co incubated with (mitomycin C-treated) lung cancer cells. ELISPOT interferon gamma-release and 51Cr release cytotoxicity were used to identify pools that stimulated immunity to the lung cancer cells to the greatest and least extent. Frozen cells from these pools were reestablished in culture; the cell-numbers were expanded and subdivided for additional rounds of positive or negative selection. After further rounds, microarray was used to identify the products of genes over-represented in the cell pool that stimulated the antitumor immune response to the greatest extent. Cyp2e1, a derivative of cytochrome p450, was identified as a dominant lung cancer antigen. As final confirmation of the immunotherapeutic properties of the identified gene-product, a vaccine was prepared by transfer of an expression vector specifying Cyp2e1 into an allogeneic cell line followed by immunization of mice with squamous cell lung cancer. An analogous strategy was used to identify dominant antigens expressed by breast cancer cells. Growth factor receptor bound protein 10 (GRB10) was identified as a dominant tumour antigen expressed by breast cancer cells.

Biography

Edward P. Cohen, M.D. is a graduate of Washington University School of Medicine. He did his postgraduate education at the National Institutes of Health, The University of Chicago and the University of Colorado. He is the author of more than 150 peer review publications involving the formation of cellular cancer vaccines. His land mark paper with Jerrold Schwaber was the first to describe the technique used to form monoclonal antibodies. Below is an example of my paper. Schwaber J and Cohen EP 1974 33. Pattern of Immunoglobulin Synthesis and Assembly in a Human-Mouse Somatic Cell Hybrid Clone Somatic Cell Hybrid Clone Proceedings of the National Academy of Sciences of the United States of America. Vol. 71, No. 6 (Jun., 1974), pp. 2203-2207.

epcohen@uic.edu

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