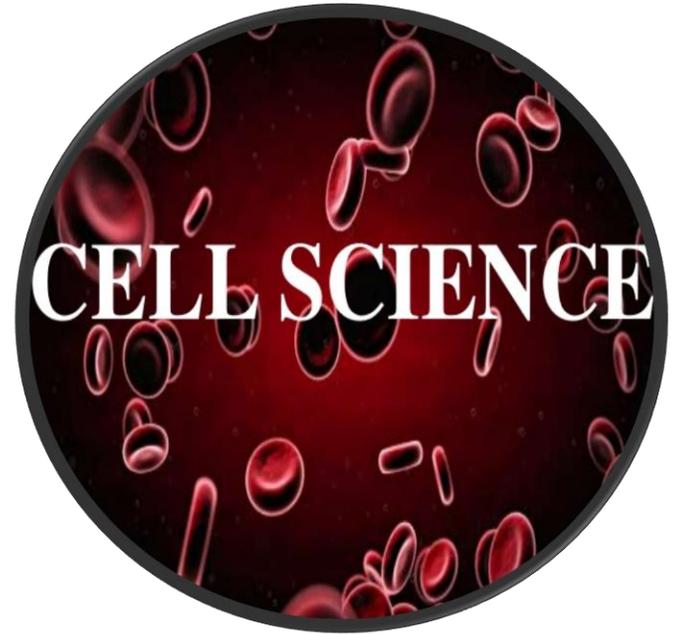


NATIONAL CENTRE FOR CELL SCIENCE (NCCS)

GRANTED PATENTS



-Prepared by

Ms. Kirti Patil,

Project Assistant

PROJECT MANAGEMENT CELL

NCCS, Pune

Method of preparing dialysed extract of fenugreek seeds which induces hypoglycemia, mediated, in part, via stimulation of insulin signaling pathway

Diabetes mellitus is an alarming medical problem affecting more than 194 million people. The principal cause of these complication is hyperglycemia mainly due to lack of insulin, or insulin resistance, or defects in insulin signaling pathways.

Fenugreek and other traditional plants are currently being investigated for their potential as a source of new hypoglycaemic compounds for the treatment of diabetes. Extracts of seeds and leaves of fenugreek have been historically known for their antihyperglycemic activity and non-toxicity. The aim of this invention is preparing dialysed aqueous extract of fenugreek seeds which induces hypoglycaemia, mediated in part, via stimulation of insulin signaling pathway.

Inventors: MK. Bhat; Vijay Kumar

Status: Granted in US

Granted Application No. & Date: US8865237 /

21.10.2014

- Dr. Manoj. K. Bhat, NCCS

Protein based product from Fenugreek seeds that regulates dyslipidemia and obesity, and a process for the preparation thereof

Dyslipidemia and obesity are major health problems and significant risk factor for many serious diseases including cardiac diseases, cancer, arthritis and diabetes.

Dyslipidemia is a disorder of lipoprotein metabolism, including lipoprotein overproduction or deficiency.

Inventors: Bhat M.K.; Pandey V.; Vijaykumar M.V.

Status: Granted in Europe (Germany & France)

Granted Application No. & Date: EP2323676 /

15.07.2015

This invention relates to a protein based product, a novel preparation from a protein rich fraction of Fenugreek Seeds (TEFS) that reduces accumulation of fat and enhances LDL (low-density lipoprotein) uptake and, a process for the preparation thereof with potential application in the management of dyslipidemia and obesity.

- Dr. Manoj. K. Bhat, NCCS

Identification, quantification, monitoring and analysis of intra-tumor heterogeneity

Tumour heterogeneity describes the observation that different tumor cells can show distinct morphological and phenotypic profiles, etc. Detection of the tumor heterogeneity can be carried out through karyotyping, spectral imaging and immunochemistry. Staining methods are relatively quick, inexpensive and easy techniques.

Inventors: Bapat S; Rutika R. Naik

Status: Granted in India

Granted Application No. & Date: IN358225 /

10.02.2021

The present invention provides a scheme for resolution of cellular diversity in solid tumors. First Level of resolution: Cancer Stem Cell specific markers. Second Level of resolution: Combinatorial quantification of differential DNA-RNA content in cell populations. Also, the invention makes possible screening of markers, identification of new drug targets, profiling various cell fractions and real-time modulation for tumor cell populations.

- Dr. Sharmila Bapat,
Scientist 'G', NCCS

A tumor deconstruction platform for the analysis of intra-tumor heterogeneity

Tumour heterogeneity describes the observation that different tumor cells can show distinct morphological and phenotypic profiles, etc. Detection of the tumor heterogeneity can be carried out through karyotyping, spectral imaging and immunochemistry. Staining methods are relatively quick , inexpensive and easy techniques.

Inventors: Bapat S; Rutika R. Naik

Status: Granted in US

Granted Application No. & Date: US10429393 /

01.10.2019

The present invention provides a scheme for resolution of cellular diversity in solid tumors. First Level of resolution: Cancer Stem Cell specific markers. Second Level of resolution: Combinatorial quantification of differential DNA-RNA content in cell populations. Also, the invention makes possible screening of markers, identification of new drug targets, profiling various cell fractions and real-time modulation for tumor cell populations.

- Dr. Sharmila Bapat,
Scientist 'G', NCCS

A tumor deconstruction platform for the analysis of intra-tumor heterogeneity

Tumour heterogeneity describes the observation that different tumor cells can show distinct morphological and phenotypic profiles, etc. Detection of the tumor heterogeneity can be carried out through karyotyping, spectral imaging and immunochemistry. Staining methods are relatively quick, inexpensive and easy techniques.

Inventors: Bapat S; Rutika R. Naik

Status: Granted in Europe

Granted Application No. & Date: EP3097418 /

28.04.2021

The present invention provides a scheme for resolution of cellular diversity in solid tumors. First Level of resolution: Cancer Stem Cell specific markers. Second Level of resolution: Combinatorial quantification of differential DNA-RNA content in cell populations. Also, the invention makes possible screening of markers, identification of new drug targets, profiling various cell fractions and real-time modulation for tumor cell populations.

- Dr. Sharmila Bapat,
Scientist 'G', NCCS

A Monoclonal Antibody Targeting the Tumor Regenerative Hierarchy

Despite the advent of targeted therapies in the last few decades, cancer remains one of the most lethal causes of human death. Most of the therapies are considered to be effective against the bulk population of tumor cells. A small fraction of cells within tumors are termed as Cancer Stem Cells (CSCs).

***Inventors: Bapat S, Rajkumar S. Kalra, Avinash Mali,
Parab P.B.***

Status: Granted in India

Granted Application No. & Date: IN374150 /

10.08.2021

The present invention presents a novel monoclonal antibody and methods of its use. The antibody was termed as mAb 150 was developed through fusion of B cells from spleens of mice with a mouse myeloma cells. The specific molecular target recognized by mAb 150 was identified to be Annexin II. It can be thus used in the design of optimal drug combinations and minimal residual disease.

- Dr. Sharmila Bapat,
Scientist 'G', NCCS

Peptides that inhibit factor B, C2 and complement activation, and their uses

The complement system is a phylogenetically ancient multi-component system. It is one of the major arms of the innate immunity and also forms the first line of defence against invading pathogens. A wide range of mechanisms activate the system in the presence as well as absence of the foreign antigen.

Inventors: Sahu A.; Kadam A.P.

Status: Granted in India

Granted Application No. & Date: IN288480 /

17.10.2017

This invention relates to synthetic peptide capable of inhibiting activation of the complement pathways comprising of various sequences. A method of producing compositions capable of inhibiting complement activation interacting with fB and C2. The composition also has a similar conformation that it is capable of inhibiting complement activation.

- Dr. Arvind Sahu,
Director In-Charge, NCCS

A composition useful in developing an artificial bone marrow-like environment

Every day in the bone marrow several billion blood cells are formed. This constant supply is ensured by blood stem cells located in special niches within the marrow. These stem cells can multiply and mature into red and white blood cells, which then leave the bone marrow and enter the bloodstream.

Inventors: Kale V. P; Padhy L.C.

Status: Granted in India

Granted Application No. & Date: IN247460 /

08.04.2011

Human health is critically dependent on a continual supply of different blood cells that are produced by a process called "haematopoiesis." The main aim of the invention is to provide a composition and in-vitro methods that assists developing an artificial bone marrow like environment where blood cell formation may be enhanced or regulated.

- Dr. Vaijayanti Kale, NCCS

NATIONAL CENTRE FOR CELL SCIENCE (NCCS)

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Protein based product from Fenugreek seeds that regulates dyslipidemia and obesity, and a process for the preparation thereof

Dyslipidemia and obesity are major health problems and significant risk factor for many serious diseases including cardiac diseases, cancer, arthritis and diabetes.

Dyslipidemia is a disorder of lipoprotein metabolism, including lipoprotein overproduction or deficiency.

Inventors: Bhat M.K.; Pandey V.; Vijaykumar M.V.

Indian Patent Application No. : 1521/DEL/2008

Date of filing: 25.06.2008

Status: Complete application filed & Published

This invention relates to a protein based product, a novel preparation from a protein rich fraction of Fenugreek Seeds (TEFS) that reduces accumulation of fat and enhances LDL (low-density lipoprotein) uptake and, a process for the preparation thereof with potential application in the management of dyslipidemia and obesity.

- Dr. Manoj. K. Bhat,
NCCS

Stable Nanoparticles And Its Pharmaceutical Composition

The area of nanoscience and nanotechnology is fast finding its application in medical field especially in the field of drug delivery system. The nanoparticles are colloidal solid particles consisting of macromolecules 100-1000 nm in size. The technology allows greater safety and bio-compatibility.

Inventors: Dr. Kundu; AS Yadav; M Gorain; S Roy

Indian Patent Application No. : 201721036409

Date of filing: 13.10.2017

Status: Complete application filed & Published

The present invention comprises a nanoparticle comprising of polysaccharide and a peptide in a chemical conjugation or a polysaccharide and andrographolide. It also discloses a method of nanoparticle synthesis comprising the steps: conjugating polysaccharide with a crosslinker, optionally conjugating cyclic peptide with polysaccharide in the presence of crosslinker to obtain a conjugate, etc. This invention can significantly increase the drug accumulation in the target sites.

- Dr. Gopal Kundu,
NCCS

Interleukin – 3 in regulation of bone homeostasis

Remodelling in bone takes place throughout the life of an individual. Osteoblasts are bone forming cells that differentiate from mesenchymal stem cells (MSCs). Interleukin-3 (IL-3), a cytokine secreted by activated T cells is a potent inhibitor of osteoclastogenesis and inhibits both RANKL and TNF- α -induced osteoclast formation and bone resorption.

Inventors: Dr. Wani; Kanupriya Singh

Indian Patent Application No. : 201721041260

Date of filing: 03.12.2017

Status: Complete application filed & Published

The present invention discloses a novel therapeutic intervention for osteoporosis. The Interleukin -3 (IL-3) can be utilized as a therapeutic intervention against osteoporosis and for regulating bone homeostasis. It also provides a method for determining the predisposition of a subject for osteoporosis by measuring the RANKL/OPG level.

- Dr. Mohan Wani,
Scientist ' G', NCCS

Artificial Bone Marrow- like Environment (ABME) compositions for boosting the regenerative capacity of hematopoietic stem cells

The bone marrow is the site for formation of different types of blood cells starting from a small number of pluripotent stem and progenitor cells (SPC). Hematopoiesis is formation of different types of mature blood cells (red blood cells, white blood cells and platelets).

Inventors: Dr. Kale

Indian Patent Application No. : 201821009213

Date of filing: 13.03.2018

Status: Complete application filed & Published

The present invention discloses a method of developing an artificial bone marrow environment composition by culturing the mesenchymal cells in suitable medium with hematomodulators; and contacting the ABME thus obtained with hematopoietic stem cells for boosting the regenerative capacity of Hematopoietic Stem Cells.

- Dr. Vaijayanti Kale,
NCCS

A novel method for detection of cancer

Osteopontin (OPN) is phosphorylated sialic acid –rich non-collagenous bone matrix protein. OPN is found in several biological fluids including human plasma, serum, breast milk and urine. Osteopontin interacts with a variety of cell surface receptors, including several integrins and CD44.

Inventors: Kundu Gopal C; Weber Georg F

Indian Patent Application No. : 201821040459

Date of filing: 26.04.2019

Status: Complete application filed & Published

The present invention is based upon the finding that the assessment of osteopontin splice variants can be used as a marker for identifying patients who have, or are likely to develop, certain types of cancer. In particular, it has been found that osteopontin splice variants are elevated in the blood of women with breast cancer. It is also been found that Osteopontin splice variants are present in unique patterns of abundance in other occult cancers.

- Dr. Gopal Kundu,
NCCS

A novel therapeutic intervention for Osteoporosis

Remodelling in bone takes place throughout the life of an individual. Osteoblasts are bone forming cells that differentiate from mesenchymal stem cells (MSCs). Interleukin-3 (IL-3), a cytokine secreted by activated T cells is a potent inhibitor of osteoclastogenesis and inhibits both RANKL and TNF- α -induced osteoclast formation and bone resorption.

Inventors: Dr. Wani; Kanupriya Singh

US Patent Application No. : 16/208,322

Date of filing: 03.12.2018

Status: Complete application filed & Published

The present invention discloses a novel therapeutic intervention for osteoporosis. The Interleukin -3 (IL-3) can be utilized as a therapeutic intervention against osteoporosis and for regulating bone homeostasis. It also provides a method for determining the pre-disposition of a subject for osteoporosis by measuring the RANKL/OPG level.

- Dr. Mohan Wani,
Scientist ' G', NCCS

A nanohybrid, its method of preparation and use

It has long been a goal of therapeutic treatment to find the magic bullet that would track to the site of need and deliver a safe therapeutic response without undue side effects. The field of particle-based drug delivery is currently focused on two chemically distinct colloidal particles, liposomes and biodegradable.

Inventors: GC. Kundu; Sumit Das; Amit Yadav; Mahadeo

Gorain; Rohit Srivastava; Rajendra Prasad; Janahvi

Devrukhar; Barkha Singh; Deepak Singh Chauhan

Indian Patent Application No. : 201921020693

Date of filing: 24.05.2019

Status: Complete application filed & Published

The present invention discloses a novel nanohybrid, a process for synthesizing the nanohybrid and its utility. It is to provide a nanohybrid, a process for synthesizing the functional nanohybrid, compositions comprising the nanohybrid and its applications.

- Dr. Gopal Kundu,
NCCS

Novel combination for its use in leishmaniasis

Leishmaniasis is one of the most neglected tropical diseases with approximately 0.6 to 1 million new cases every year. Leishmaniasis comes in three forms: cutaneous, visceral, and mucocutaneous. Different species of the Leishmania parasite are associated with each form. In particular, the present invention pertains to a novel combination for its use against Leishmaniasis, a composition comprising the combination, use of the combination and methods of treatment using the said combination.

Inventors: Dr.Shailza Singh

Indian Patent Application No. : 201921043619

Date of filing: 26.10.2019

Status: Complete application filed & Published

The present invention discloses novel peptide YGRKKRRQRRRGGPYGNHSY which induces autophagy by binding the protein GAPR-1. The peptide reported here binds GAPR-1 to free Beclin-1 and subsequently induce autophagy. The peptide can be used to induce or enhance autophagy and finds therapeutic application in a broad spectrum of disease pathologies that benefit from augmented autophagy, including obesity, Diabetes, NASH, cancer, neurodegenerative diseases and pathogenic infections.

- Dr. Shailza Singh,
Scientist 'E', NCCS

A novel chimeric protein kinase C as an immunomodulator

Leishmaniasis is a disease caused by protozoan parasites that belong to the genus *Leishmania*. There are 3 main forms of leishmaniases: cutaneous, mucocutaneous, or visceral leishmaniasis. Protein kinase C (PKC) is a family of serine/threonine kinases involved in a variety of physiologic functions.

Inventors: Dr. Shailza Singh; Dipali Kosey and Milsee

Mol

Brazil Patent Application No. : BR 112020016654-5

Date of filing: 14.08.2020

Status: Complete application filed & Published

The present invention relates to a novel designed protein to act against infections caused by *Leishmania* species. More specifically, it pertains to a novel, chimeric protein kinase C having SEQ ID No. 1 for immune modulation by targeting NFκB pathway in leishmaniasis. It also relates to a method of producing the chimeric protein having SEQ ID 1.

- Dr. Shailza Singh,
Scientist 'E', NCCS

A novel chimeric protein kinase C as an immunomodulator

Leishmaniasis is a disease caused by protozoan parasites that belong to the genus *Leishmania*. There are 3 main forms of leishmaniases: cutaneous, mucocutaneous, or visceral leishmaniasis. Protein kinase C (PKC) is a family of serine/threonine kinases involved in a variety of physiologic functions.

Inventors: Dr. Shailza Singh; Dipali Kosey and Milsee Mol

Indian Patent Application No. : 201821005856

Date of filing: 15.02.2018

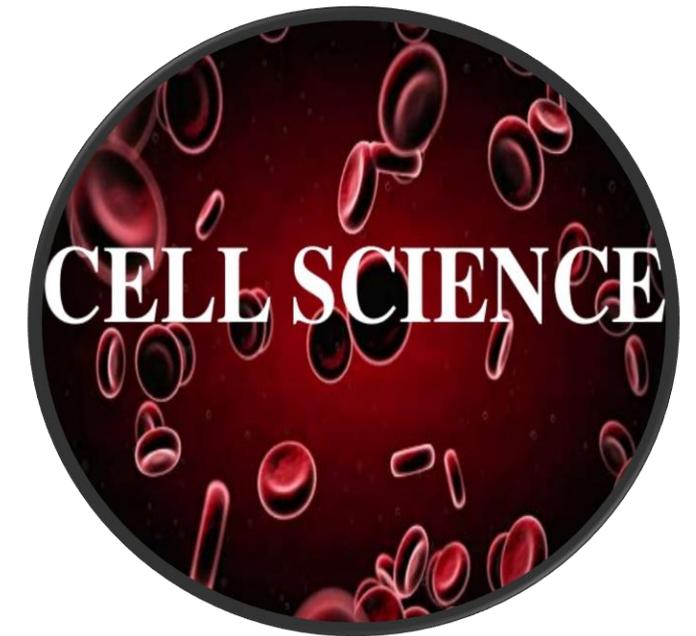
Status: Complete application filed & Published

The present invention relates to a novel designed protein to act against infections caused by *Leishmania* species. More specifically, it pertains to a novel, chimeric protein kinase C having SEQ ID No. 1 for immune modulation by targeting NFκB pathway in leishmaniasis. It also relates to a method of producing the chimeric protein having SEQ ID 1.

- Dr. Shailza Singh,
Scientist 'E', NCCS

NATIONAL CENTRE FOR CELL SCIENCE (NCCS)

FILED UN-PUBLISHED PATENTS



LIST OF APPLICATIONS FILED

Sr.No	Title	Inventors	Application No.	Country	Date of filing
1	A novel anti-cancer combination	Dr. Padma Shastry	201821033349	India	05.09.2018
2	A novel anti-cancer combination and a method of therapy using the combination	Dr. Padma Shastry	17/273,642	USA	04.03.2021
3	A novel anti-cancer combination and a method of therapy using the combination	Dr. Padma Shastry	202117007583	India	23.02.2021
4	A novel anti-cancer combination and a method of therapy using the combination	Dr. Padma Shastry	19857142.4	Europe	26.03.2021
5	DAF-MCP chimeric protein, process to manufacture the same and use of the chimeric protein for treating pathological conditions involving the complement system	Sahu Arvind;Ojha Hina;Ghosh Payel; Barage Sagar H; Panwar Hemendra Singh	201921014960	India	13.04.2019
6	A Novel Anti- Cancer Combination	Athavale, Dipti Anil; Bhat, Manoj Kumar	20202105307	India	07.04.2020
7	SARS-COV-2 Neutralization Antibody and its Application Thereof	Chaturvedi Akansha; Chauhan Radha; Sahu Arvind; Rao Kanury; Nayak Debashish	202021044304	India	12.10.2020
8	Novel Combination of Serotonin Receptor (5-HTR2B) Antagonist and an Immunomodulator for inhibition of cancer	Dr. Girdhari Lal, Surojit Karmakar	202121044467	India	30.09.2021
9	DAF-MCP chimeric protein, process to manufacture the same and use of the chimeric protein for treating pathological conditions involving the complement system	Sahu Arvind;Ojha Hina;Ghosh Payel; Barage Sagar H; Panwar Hemendra Singh	17/603,444	USA	13.10.2021
10	DAF-MCP chimeric protein, process to manufacture the same and use of the chimeric protein for treating pathological conditions involving the complement system	Sahu Arvind;Ojha Hina;Ghosh Payel; Barage Sagar H; Panwar Hemendra Singh	202117049723	India	29.10.2021
11	DAF-MCP chimeric protein, process to manufacture the same and use of the chimeric protein for treating pathological conditions involving the complement system	Sahu Arvind;Ojha Hina;Ghosh Payel; Barage Sagar H; Panwar Hemendra Singh	10-2021-7036801	South Korea	10.11.2021
12	DAF-MCP chimeric protein, process to manufacture the same and use of the chimeric protein for treating pathological conditions involving the complement system	Sahu Arvind;Ojha Hina;Ghosh Payel; Barage Sagar H; Panwar Hemendra Singh	20790534	Europe	05.11.2021