


Details of the Collaborative Activities under Functional MoUs/linkages

Collaborating Institute: SENGENICS SDN BHD, Selangor, Malaysia

Month and Year of MoU: March 2015

Activities: Collaborative joint research activities were undertaken with SENGENICS SDN BHD, Selangor, Malaysia.

1. Validation of existing biomarkers and identification of additional novel biomarkers for the published patent entitled “Method for detection & diagnosis of oral cancer in a sample”.
2. Joint Research for ImmuSAFE array based technology of Sengenics
3. Eight key biomarkers have been identified from the oral cancer samples.
4. Joint Patent: Method for detection & diagnosis of oral cancer in a sample (US2018/0321244A1, 2018100578 and 201741015794)

ATTESTED

Dr. Mangadhara Somayaji K S
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 019, Karnataka

Patent Search

Invention Title	METHOD FOR DETECTION & DIAGNOSIS OF ORAL CANCER IN A SAMPLE
Publication Number	19/2018
Publication Date	11/05/2018
Publication Type	INA
Application Number	201741015794
Application Filing Date	04/05/2017
Priority Number	
Priority Country	
Priority Date	
Field Of Invention	BIO-MEDICAL ENGINEERING
Classification (IPC)	A61B 17/24

Name	Address	Country	Nationality
ABDULLA, Riaz	1003 Hallmark Apartments, M G Road, Mangalore Karnataka INDIA 575003	India	India
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PINTO MARIA, Sneha	N0-494 SNEHIL, 2nd cross, Off New BEL Road, MSRIT PO, Bangalore Karnataka INDIA 560054	India	India
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HAFIZ ISKANDAR, Johan	Sengenics Sdn Bhd, Level G, High Impact Research Building, University of Malaya, Kuala Lumpur Selangor Malaysia 50603	Malaysia	Malaysia
ANWAR, Arif	Sengenics Sdn Bhd, Level G, High Impact Research Building, University of Malaya, Kuala Lumpur Selangor Malaysia 50603	Malaysia	Malaysia
YENEPOYA MOHAMMED Farhaad	Al-Manhal, Vas Lane Mangalore Karantaka INDIA 575002	India	India

Name	Address	Country	Nationality
YENEPOYA UNIVERSITY	Yenepoya University, University Road, Deralakatte Mangalore Karnataka INDIA 575018	India	India

Abstract:

The present disclosure relates to a method for detecting a biomarker selected from the group consisting of Nucleotide binding protein 2 (NUBP2), Testis specific protein Y-linked 3 (TSPY3), XAGE-4 protein (XAGE4), Testis specific protein Y-linked 2 (TSPY2), Replication protein A2 (RPA2), Pyrroline-5-carboxylate reductase 1 (PYCR1), Thymidine kinase 1 (TK1), High mobility group nucleosome binding domain 5 (HMGNS/NSBP1), Rhoophilin associated protein 1 (ROPN1, Ropporin), RNA binding motif protein 46 (RBM46), Proteasome (prosome, macropain) activator subunit 3 (PSME3), Keratin 19 (KRT19), Transgelin (TAGLN), Peroxiredoxin (PRDX1), S100 Calcium binding protein A9 (S100A9), and Inosine monophosphate dehydrogenase 1 (IMPDH1), in a sample. The present disclosure provides for the use of biomarker for the detection of oral cancer in a sample. The detection of the biomarker helps in early diagnosis of oral cancer.

Complete Specification

DESC:FIELD

The present disclosure relates to a method for detecting a biomarker in a sample.

ABBREVIATIONS:

- NUBP2: Nucleotide binding protein 2;
- TSPY3: Testis specific protein Y-linked 3;
- XAGE4: XAGE-4 protein;
- TSPY2: Testis specific protein Y-linked 2;
- RPA2: Replication protein A2;
- PYCR1: Pyrroline-5-carboxylate reductase 1;
- TK1: Thymidine kinase 1;
- HMGNS/NSBP1: High mobility group nucleosome binding domain 5;
- ROPN1: Rhoophilin associated protein 1 (Ropporin);
- RBM46: RNA binding motif protein 46;
- PSME3: Proteasome (prosome, macropain) activator subunit 3;
- KRT19: Keratin 19;

[View Application Status](#)



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 Mangalore, Karnataka

Sengenics & Yenepoya Collaboration - Follow up call

Nurul H Rutt | Sengenics <n.rutt@sengenics.com>

Fri 08/05/2020 05:38 PM

To: rizdent@hotmail.com <rizdent@hotmail.com>; rizdent@yenepoya.edu.in <rizdent@yenepoya.edu.in>
Cc: Dr. Arun A. B. <bhagwatharun@hotmail.com>; Dr. Rekha P. D. <rekhapd@hotmail.com>; Asim Syed Sheeraz <asim.shrz@gmail.com>; Dr Arif Anwar <a.anwar@sengenics.com>; Johan Iskandar | Sengenics <j.iskandar@sengenics.com>
Hi Dr. Riaz,

It was really good to catch up with you and your colleagues earlier today. A quick summary of our meeting here for easy reference:

- **Oral Cancer Study - Pilot**
 - Patent issue clarified and resolved
 - Yenepoya will share the document(s) which confirms Dr. Arif Anwar and Mr. Johan Hafiz Iskandar's affiliates and residency
 - Upon confirmation of the above, Sengenics to send out an official letter to Yenepoya in response to the letter sent out by our legal counsel which will confirm that no additional action will be needed from Yenepoya
- **Oral Cancer - Validation phase**
 - Next phase study to cover a larger cohort - validation of existing biomarkers and identification of additional novel biomarkers
 - Key objectives: manuscript submission and new patent filing
 - Funding availability will be determined from Yenepoya (ETA - next week)
 - Sengenics and Yenepoya will pursue this project as a collaboration - Further discussions on the collaboration agreement can be initiated during the next call
 - Schedule a call the week of the 11th May with Yenepoya's and Sengenics' research teams (Please do confirm your available dates/times for next week)
- **Covid-19 serology screening**
 - Sengenics to share across detailed information on the ImmuSAFE Covid+ biochip
 - Funding availability will be determined from Yenepoya (ETA - next week)
 - Yenepoya to determine regulatory processes / line of resistance to get involved with the Ministry of Health in India for population Covid-19 screening
 - Explore research opportunities within the Covid-19 space, leveraging Sengenics' KREX-based arrays
 - Follow up call to discuss this opportunity further (Please do confirm your available dates/times for next week - we are good to also combine this discussion with the Oral Cancer meeting, if that is more convenient)

I hope this helps. Please let me know if I have missed out anything. Looking forward to our calls next week. In the meantime, have a good weekend ahead, and please stay safe and healthy.

Thank you.

Sincere regards,

Nurul

[Nurul H Rutt | Head of Corporate Strategy](#)

Skype: nurulh.rutt

Tel: +6 (0) 17 282 9412

www.sengenics.com

THE functional proteomics company

Shortcuts to:

[Video on how the KREX technology works and key apps](#)

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University Road, Derelakatte
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[Watch our corporate video](#)

[Download our newest science powerpoint file](#)

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Dr. Angadhara Somayaji K S
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Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 018, Karnataka.

Re: Report publishing / patenting & JOINT PROJECT PROGRESS

Johan Poole-Johnson <j.iskandar@sengenics.com>

Mon 29/08/2016 12:07 PM

To: Dr. Riaz Abdulla <rizdent@yahoo.com>

Cc: Dr Arun Bhagwat <bhagwatharun@hotmail.com>; rekhapd@hotmail.com <rekhapd@hotmail.com>

Dear Dr Riaz,

Ok noted. As per our correspondence lets proceed with your institute and Sengenics first.

We would recommend a second phase to make the total of numbers 100 cases + 100 controls. This is the ideal optimal number to ensure what we patent will be based on the right markers before we go to field trials.

We can proceed with based on the cost sharing pricing we did for the initial phase.

Sincere regards,

Johan

Johan Poole-Johnson | Commercial Director | sengenics

MBA (Murdoch, Australia)

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On 27 August 2016 at 13:18, Dr. Riaz Abdulla <rizdent@yahoo.com> wrote:

Hi Johan

Sorry for the delayed response as we had to discuss the proposal in our university .

Thanks for the reply to the queries .


We wanted to know the total costing of the project and individual contribution from the UM and our (YU) side to make things more clear in terms of finances .

Another urgent matter is about the patenting of the earlier results . As I had told you earlier we are in the process of patenting few biomarkers of the previous cohort . We plan to include your name in the list of inventors . I wanted discuss with Prof . Rosnah about including her name too as she would be part of the future joint larger cohort project on the same study . Is there any one else we should include in patent for the previous results , **please let me know urgently** .

I think Prof Rosnah is visiting India in the month of September and I hope to get in touch with her and discuss in detail about having an MoU in regard to project and university .

Will keep you updated .

Regards

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Mangalore 575 018, Karnataka.

Dr Riaz Abdulla

Sent from my iPhone

On 20-Aug-2016, at 12:04 PM, Johan Poole-Johnson <j.iskandar@sengenics.com> wrote:

Dear Dr Riaz,

Wonderful - yes it is critical we push this forward as soon as possible.

1- What is the total number of oral cancer samples contribution (YU & UM) ??

- UM agreeable to share their 100 cases with you in return for shared IP
- So we really need to get ideall 100+100

2- Is there a specified Timeline ???

- Ideally soon - how fast can your university go

3- What is the final call on VALIDATION ??

- ideally a low cost custom protein array for larger field study validation
- or for clinical - we can then go to ELISA.

Before the proposal, can you confirm what type of budget your university can come up with?

Hope to hear from you soon!

Sincere regards,

Johan

Johan Poole-Johnson | Commercial Director | sengenics

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On 19 August 2016 at 00:54, Dr. Riaz Abdulla <rizdent@yahoo.com> wrote:

Dear Johan

I have forwarded your mail to the director and a meeting is to be scheduled soon in relation to the joint project . It's indeed good to hear a positive response from University of Malaya through Prof Rosnah and I thank you for the same

Kindly specify in final the following so as to move ahead to the next level :

- 1- What is the total number of oral cancer samples contribution (YU & UM) ??
- 2- Is there a specified Timeline ???

3- What is the final call on VALIDATION ??

If possible can Sengenics give a final outline of the proposal and the tentative timeline to make things more transparent . I shall put forward the final outline to the R&D / Finance and let you know the outcome after the meeting .

Regards
Dr Riaz Abdulla

Sent from my iPhone

On 09-Aug-2016, at 5:50 AM, Johan Poole-Johnson <j.iskandar@sengenics.com> wrote:

Ok great - will look forward to hearing from you soon!

Sincere regards,

Johan

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On 9 August 2016 at 06:57, Dr. Riaz Abdulla <rizdent@yahoo.com> wrote:

Ok Johan noted . Will follow it up when I get back to India .

Regards
Riaz

Sent from my iPhone

On 07-Aug-2016, at 4:13 AM, Johan Poole-Johnson <j.iskandar@sengenics.com> wrote:

Hi Dr Riaz,

Finally met with Prof Rosnah. Summary as follows:-

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University Road, Deralakatte
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1. Interested to proceed - they need to fill in a FORM Application
2. UM proposes do 50% match to your funding as they will provide significantly more samples to share with you
3. She is looking for an Researcher under her to be dedicated to the project

Would you have any news on your part?

Sincere regards,

Johan

Johan Poole-Johnson | Commercial Director | sengenics

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On 5 August 2016 at 17:02, Dr. Riaz Abdulla
<rizdent@yahoo.com> wrote:

Hi Johan ,

Thanks for the wishes and same to you . I am in London right now . Please keep me updated through mail as my phone will not be constantly working. I will be back only on the 10 August.

Regards

Riaz

Sent from my iPhone

On 02-Aug-2016, at 10:22 AM, Johan Poole-Johnson
<j.iskandar@sengenics.com> wrote:

Salam Dr Riaz,

Wishing you a blessed Eid Mubarak!

Apologies for the delay in getting back to
you.

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Dr. Angadhara Somayaji K S
Registrar
Jeehepoya (Deemed to be University)
University Road, Deralakatte
Mangalore 575 018, Karnataka.

You need to definitely do more samples to patent the right biomarkers.

I have been chasing Prof Rosnah and now will finally meet her 3pm this Friday. Will call you soon after!

Incidentally we spent the week with Prof Hanno Langen, Global Head, Roche. Our customer and partner.

He said our technology is unique and will yield valuable patents and tests downstream. He said **60% of Roche revenue is from Antibody biomarkers!**

will keep you posted!

Sincere regards,

Johan

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On 22 July 2016 at 17:53, Dr. Riaz Abdulla <rizdent@yahoo.com> wrote:

Hi Johan .

Just wanted to inform you that we had validated part of the results on the old report Sengenics had sent . We are in the process of patenting and reporting part of the results. This is important as we have to submit urgently the outcome/ report of the earlier cohort results which the university had supported financially Will keep you updated and hope there is progress from your side in regard to the

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6/3/2021

Email - Dr. Rekha P D - Outlook

joint collaboration on triple sharing with
UM .

Regards
Dr Riaz

Sent from my iPhone

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Dr. Langadhara Somayaji K S
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University Road, Deralakatte
Mangalore 575 018, Karnataka.

9

MEMORANDUM OF UNDERSTANDING
BETWEEN
YENEPOYA UNIVERSITY, MANGALORE, INDIA
AND
SENGENICS SDN BHD

(REPRESENTING OXFORD GENE TECHNOLOGY FOR INDIA AND ASIA)

WITNESSED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
Mangalore- 575 018, Karnataka

SIGNED ON

30th of March 2015

Office of the Registrar
Yenepoya University, Mangalore
No. 273
Date 13/4/2015

This MEMORANDUM OF UNDERSTANDING ("MOU") is made and entered into and shall be effective as on the 30th day of 2015

BETWEEN

YENEPOYA UNIVERSITY, (Recognized as deemed-to-be- university under section 3(A) of the UGC act) located at University Road, Deralakatte, Mangalore, 575 018, INDIA represented by its Registrar Prof. (Dr.) C.V. Raghuvver (hereinafter referred to as "YU") as the First party

AND

SENGENICS SDN BHD (823880-D) representing Oxford Gene Technology for India & Asia, a company incorporated under laws of Malaysia and having its place of business at D-3, Plaza Kelana Jaya, Jalan SS7/13A, Petaling Jaya, 47301, Selangor, Malaysia (hereinafter referred to as "SSB") represented by its Executive Director, Dr. Ayif Anwar as the Second party

And the parties shall hereinafter referred to individually on this MoU as the "Party" and collectively as the "Parties"

WHEREAS:-

- A. SENGENICS (SSB) is the strategic Asia Arm of Oxford University Emeritus Prof Sir Edwin Sothem's Group Oxford Gene Technology (OGT), the National Health Service (NHS), UK and is a member of the International Standard Cytogenomics Array (ISCA) Consortium.
- B. "YU" and "SSB" are interested to collaborate on various genomic and proteomics based collaborations. This collaboration would be geared towards providing cutting-edge genomic and proteomic based technologies for a variety of research applications related to biomarker discovery.
- C. The parties have agreed to enter into this Memorandum of Understanding to formalize their relationship and understanding in accordance with the terms stipulated hereunder.

NOW THEREFORE, the parties have agreed as follows:-

1.0 PURPOSE OF MEMORANDUM OF UNDERSTANDING

1.1 This MoU defines the scope of the collaboration between "YU" and "SSB".

To provide:

- 1.1.1 Microarray based technologies and associated bioinformatics analysis services;
- 1.1.2 Next generation sequencing service (genomics and transcriptomics applications) and associated bioinformatics services;

ATTESTED

Dr.Gangadhara Somayaji K.S.
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Deemed to be University)
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575 018, Karnataka

1.1.3 Proteomics microarray services for biomarker discovery.

2.0 ROLES AND RESPONSIBILITIES

2.1 The parties agree that the SSB's roles and responsibilities are as follows:-

- a. To give "YU" access to SSB's portfolio of technologies and services.
- b. To give access to new burgeoning genomic and proteomic technologies to "YU" immediately upon their market availability.
- c. To provide full technical support to "YU" for all research projects and to undertake joint research projects of mutual interest in the future
- d. For capacity building of institution ("YU") / researchers through seminars, workshops, lecture series in the university by SSB & Oxford Gene Technology.
- e. The Second party shall provide training at any of their facilities in Malaysia, Singapore and the United Kingdom to the Scientists, Post Graduates and Researchers

3.0 COMMENCEMENT AND TERM

3.1 This Memorandum of Understanding comes into force on the date of execution.


4.0 LEGAL EFFECT

4.1 This Memorandum sets out the understanding of the parties but is not intended to be legally binding on the parties hereto but serves to highlight the framework upon which the parties shall enter into a formal Agreement or other agreement instruments subsequently.

5.0 CONFIDENTIALITY

5.1 Each party shall at all times use its best endeavour to keep confidential (and to produce that its respective employees and agents shall keep confidential) any confidential information which it or they may acquire in relation to a project and shall not use or disclose such information except with the consent of the other party or in accordance with the order of a court of competent jurisdiction.

5.2 The obligations of each of the parties contained in this Clause 5.1 shall continue with limit in point of time and notwithstanding the termination of this Memorandum of Understanding but shall cease to apply to any such party of its obligations contained in this Memorandum of Understanding PROVIDED that nothing in this Clause 5.1 shall prevent any party from disclosing any such information to the extent required or in connection with legal proceedings arising out of this MoU.

ATTESTED

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Registrar
Yenepoya (Deemed to be University)
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Mangalore- 575 018, Karnataka

5.3 For the purpose of this Clause 5 the expression "Party" shall include the holding and subsidiary companies of any party and any other company controlled by such other party and the employees or agents of the party and of such subsidiary or controlled companies.

6.0 NON ASSIGNMENT

All rights and obligations of the parties shall be exclusively bound by this MoU and neither party hereto shall assign or attempt to assign any such rights and obligations without prior written consent of the other party.

IP RIGHTS

The IP rights generated from the outcome of the joint research project shall be the sole property of "YU".

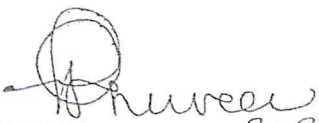
Financial Issues:

The scope of activities under this agreement shall be determined by funds regularly available at both institutions for the various types of projects undertaken and by such other financial assistance as may be obtained by either institution from external sources.

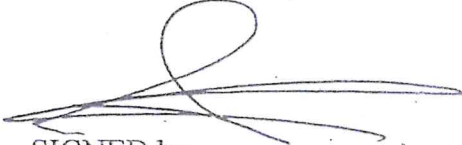
7.0 MISCELLANEOUS

7.1 This Memorandum shall be construed and enforced in accordance with the laws of Malaysia and the laws of India and /or laws relating to the project.

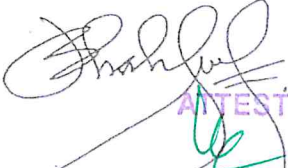
THE PARTIES NAMED ABOVE HEREBY CONFIRM THEIR RESPECTIVE UNDERSTANDING by signing below


SIGNED by *30.3.2015*
Dr. C.V. Raghuvver Registrar
For and on behalf of *renepoya University*
YENEPOYA UNIVERSITY
In the presence of:-
University Road, Deralakatte
Mangalore - 575018

1) **Dr. RIAL ABDULLA**
Professor
ORAL PATHOLOGY, YU.
30/3/2015


SIGNED by
Dr Arif Anwar
Executive Director
For and on behalf of
SENGENICS SDN BHD
In the presence of:-

SYED MANZOR SHAH BIN BAKAR ALI SHAH


ATTESTED

Dr. Gangadhara Somayaji K.S.
Registrar
Yenepoya (Deemed to be University)
University Road, Deralakatte
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