



**Working Group on Biotechnology and Biomedicine  
including Human Health and Neuroscience**

**The 1<sup>st</sup> WG Biomed Meeting  
Statement**

Moscow region, the Russian Federation

November 17, 2017

1. The 1st Meeting of the Working Group on Biotechnology and Biomedicine including Human Health and Neuroscience (hereafter - WG Biomed) has been held in Russia in accordance with the BRICS Jaipur Declaration signed at the 4th BRICS Science, Technology and Innovation (STI) Ministerial Meeting on October, 8 2016 (Article 16) and the revised BRICS Work Plan 2015-2018 (Article 5, Article 6.1) as well as Action Plan 2016-2017.

2. The main work results of the 1st Meeting of WG Biomed to be reported to the BRICS STI Senior Officials Meeting (SOM) are as follows.

2.1. WG Biomed has been established and the two-day meeting adopted the approved agenda (Annex 1).

2.2. As pilot areas of cooperation for the initial phase, WG Biomed stressed two main areas: Antimicrobial Resistance and Cognitive Disorders.

2.3. WG Biomed agreed on the Terms of Reference (ToR), which is an integral part of the current Statement (Annex 2).

2.4. WG Biomed has considered the interim results of BRICS Joint call 2016/2017.

2.4.1. The WG Biomed has stressed the importance to have the topics in the field of Biotechnology and Biomedicine including Human Health and Neuroscience revised and updated for the 3rd Call for proposals, which will take place in 2018. It was agreed that WG Biomed focal points will collect suggestions on revision of Joint Call's topics by the 15<sup>th</sup> of January, 2018. Russia and Brazil as coordinating countries

will incorporate together proposals to be submitted to the WG on BRICS STI Funding by March 01, 2018.

2.4.2. The WG Biomed will suggest to Senior officials, given the success of the 1<sup>st</sup> Joint Call, to increase resources allocated to future Joint Calls, especially in the field of Biotechnology and Biomedicine including Human Health and Neuroscience.

2.4.3. The WG Biomed welcomes the initiative proposed by WG on BRICS STI Funding to create BRICS Science, Technology and Innovation Newsletters.

2.5. The WG Biomed stresses the importance of involving industry to joint STI projects. It was agreed that the focal points will coordinate and induce this dialogue including sharing experience, identifying potential industry partners, including startups and spinoffs, as well as mechanisms for collaboration.

2.6. The participants of the Meeting encourage the authorities of BRICS countries to harmonize national standards and regulations in the field of working with medical information in order to expand the possibilities of using Big Medical Data for joint R&D projects, while fully respecting privacy concerns and national security interests of the BRICS countries.

2.7. During the Meeting, Russia has presented the project “Co-Brain Analytics”. In the framework of this project, the Big Neurodata are collected from different organizations to develop algorithms for machine learning for early diagnosis of various cognitive disorders. BRICS organizations are invited to joint this initiative.

2.8. During the Meeting, China has presented China's 13th Five-year Plan "National biomedical Big Data infrastructure".

2.9. During the Meeting, Brazil presented the BRICS TB Research Network initiative, which has the goal of eradicating tuberculosis in BRICS countries as a case of success of cooperation in the Health sector and Academia among BRICS countries, and proposed that Drug Resistant TB could be used as a research platform for AMR Agenda.

3. The 2nd Meeting of WG Biomed is scheduled for 2018. South Africa offered to host the meeting in 2018. The proposed topic for the 2nd WG Biomed Meeting is WG Biomed long-run action plan.

## Agenda of the 1<sup>st</sup> Meeting of the Working Group on Biotechnology and Biomedicine including Human Health and Neuroscience

**The Russian Federation, Moscow region, 16-17 November 2017**

**1<sup>st</sup>Day – Thursday, 16 November 2017 (Skoltech, room 303 “Multifunctional”)**

<b>Time</b>	<b>Measure</b>
10:30 – 11:00	Arrival of the delegates at Skoltech Welcome coffee (registration on floor “3”, near room 303 “Multifunctional”)
<b>11:00 – 11:30</b> (30 minutes)	<b>Opening of the meeting</b> Welcome speech by Skoltech President Opening speech by China as the BRICS Chairmanship country in 2017 (7 min) Opening speech by Russia as the WG Biomed coordinating country hosting the meeting (7 min) Opening speech by Brazil as the WG Biomed coordinating country (5 min) Greetings from representatives of: South Africa (3 min) India (3 min)
<b>11:30 – 12:50</b> (80 minutes)	<b>Session 1-I « BRICS’ policies for Biotech &amp; Biomed and main challenges »</b> <b>Moderators:</b> Russia ( <i>Andrey Lisitsa</i> , Institute of Biomedical Chemistry) Brazil ( <i>Luiz Henrique Mourao do Canto Pereira</i> , Ministry of Science, Technology, Innovation and Communication)  Brazil ( <i>Luiz Henrique Mourao do Canto Pereira</i> ) – 15 min South Africa ( <i>Gloudina Loots</i> ) – 15 min China ( <i>Zheng Zeng</i> ) – 15 min Russia ( <i>Andrey Lisitsa</i> ) – 15 min India ( <i>TBD</i> ) – 15 min

12:50 – 13:10	Group photo
13:10 – 14:40	Lunch (canteen in the ‘sea-green’ building)
<b>14:40 – 16:00</b> (80 minutes)	<p><b>Section 1-II « Discussion of WG Biomed Terms of Reference and Organizational Issues»</b></p> <p><b>Moderator:</b>  Brazil (<i>Luiz Henrique Mourao do Canto Pereira</i>, Ministry of Science, Technology, Innovation and Communication)  Russia (<i>Andrey Anikeev</i>, Ministry of Education and Science)</p> <p>Introduction – 5 min  Remarks – 5 min each:</p> <p>Brazil  China  South Africa  Russia  India</p> <p><b>Round table discussion</b> – 60 min</p>
16:00 – 16:20	Coffee Break
<b>16:20 – 17:30</b> (70 minutes)	<p><b>Session 1-III « BRICS Joint Call 2016/2017: Main findings and how to improve Biotech &amp; Biomed collaboration projects»</b></p> <p><b>Moderators:</b>  Russia (<i>Irina Kuklina</i>, International Centre for Innovations in Science, Technology and Education)  Brazil (<i>Luiz Henrique Mourao do Canto Pereira</i>, Ministry of Science, Technology, Innovation and Communication)</p> <p>BRICS Joint Call 2016/2017: overview of results (<i>Yaroslav Sorokotyaga</i>, Russian Foundation for Basic Research, Russia) – 20 min  South Africa (<i>Glaudina Loots</i>, Department of Science and Technology) – 15 min  Brazil (<i>Luiz Henrique Mourao do Canto Pereira</i>) – 10 min</p> <p><b>Round table discussion</b> – 30 min</p>
19.00	Dinner on behalf of Skoltech President

**2<sup>nd</sup>Day – Friday, 17 November 2017 (Skoltech)**

<b>Time</b>	<b>Measure</b>	
10:00 – 10:30	Registration of new guests (Skoltech, room 303, “Multifunctional”)	
<b>10:30 – 11:00</b> (30 minutes)	<b>Opening of the second day</b> (Skoltech, Russia) <b>Presentation:</b> Creation of complete telemedicine system in regions of BRICS countries ( <i>Mikhail Natenzon</i> , Russia) – 15 min	
	<b>Session 2-I « Pilot areas of cooperation for the initial phase »</b>	
<b>11.10 – 12.30</b> (80 minutes)	<b>Antimicrobial resistance (Part I)</b> Skoltech, room 303 (Floor «3») <p><b>Moderators:</b> <i>Roman Kozlov</i> (Institute of Antimicrobial Chemotherapy / Smolensk State Medical University, Russia), TBD (Brazil)</p> <ol style="list-style-type: none"> <li>1. Antimicrobial resistance: a global threat (<i>Roman Kozlov</i>) – 15 min</li> <li>2. Current state and key problems in AMR in BRICS countries:               <ul style="list-style-type: none"> <li>• Brazil (<i>Luiz Henrique Mourao do Canto Pereira</i>) – 15 min</li> <li>• China (<i>Bo Zheng</i>, Peking University First Hospital, China) – 15 min</li> <li>• South Africa (<i>TBD</i>) – 15 min</li> </ul> </li> </ol>	<b>Neuroscience and Cognitive disorders (Part I)</b> Skoltech, room 148 (Floor «1») <p><b>Moderators:</b> <i>Michael Piradov</i> (Research Center of Neurology, Russia), <i>Andrey Ivashchenko</i> (High-Tech Center «CHEMRAR»)</p> <p>Current status in Neurosciences in BRICS countries:</p> <ul style="list-style-type: none"> <li>• Russia: Industrial Union ‘NeuroNet’ Roadmap (<i>Andrey Ivashchenko</i>, «CHEMRAR», Russia) – 15 min</li> <li>• China (<i>Yixue Li</i>, CAS-MPG Partner Institute for Computational Biology, SIBS, CAS) – 15 min</li> <li>• South Africa (<i>Soria Seedat</i>, Stellenbosch University) – 15 min</li> </ul>

	<ul style="list-style-type: none"> <li>• Russia (<i>Andrey Deknich</i>, Institute of Antimicrobial Chemotherapy / Smolensk State Medical University, Russia) – 15 min</li> </ul>	<ul style="list-style-type: none"> <li>• Brazil (<i>Esper Abrao Cavalheiro</i>, Federal University of Sao Paulo) – 15 min</li> </ul>
12.30 – 14:00	Lunch (canteen in the ‘sea-green’ building)	
<b>14:00 – 15:20</b> (80 minutes)	<p><b>Antimicrobial resistance (Part II)</b> Skoltech, room 303 (Floor «3»)</p> <p><b>Moderators:</b></p> <p><i>Roman Kozlov</i> (Russia),</p> <p><i>Bo Zheng</i> (Peking University First Hospital, China)</p> <p>Surveillance of AMR: merging the countries’ expertise:</p> <ul style="list-style-type: none"> <li>• Global AMR Surveillance System (<i>Carmem Pessoa da Silva</i>, WHO, Brazil) – Videoconference – 15 min</li> <li>• Surveillance system in China – (<i>Bo Zheng</i>, Peking University First Hospital, China) – 15 min</li> <li>• South Africa (<i>TBD</i>) – 15 min</li> <li>• Brazil (<i>TBD</i>) – 15 min</li> <li>• Russia (<i>Roman Kozlov</i>, Institute of Antimicrobial Chemotherapy / Smolensk State Medical University, Russia) – 15 min</li> </ul>	<p><b>NeuroScience and Cognitive disorders (Part II)</b> Skoltech, room 148 (Floor «1»)</p> <p><b>Moderators:</b> <i>Michael Piradov</i> (Research Center of Neurology, Russia)</p> <ul style="list-style-type: none"> <li>• Neurotechnologies for investigation and treatment of neurocognitive disorders (<i>Jean Faber de Abreu</i>, University of Sao Paulo, Brazil) – 15 min</li> <li>• Risk assessment of Alzheimer’s disease based on immunological parameters (<i>Tatyana Klyushnik</i>, Mental Health Research Center, Russia) – 15 min</li> <li>• Challenges in computational biology and the role of big data (<i>Wang Zefeng</i>, CAS-MPG Partner Institute for Computational Biology, China) – 15 min</li> <li>• The future of Big Data analysis: Are there applications to neuroscience? (<i>Jin Kolesnikov</i>, SingularityU Moscow, Russia) – 15 min</li> <li>• Neurodegenerative diseases as a challenge of the 21st century (<i>Tatyana Pronina</i>, The Institute of Developmental Biology of RAS, Russia) – 15 min</li> </ul>
15:20 – 15:40	Coffee break (room 303)	

<p><b>15:40 – 16:50</b> (70 minutes)</p>	<p><b>Antimicrobial resistance (Part III)</b> Skoltech, room 303 (Floor «3»)</p> <p><b>Moderator:</b> <i>Roman Kozlov</i> (Russia) What can be done at national and international level to control antimicrobial resistance?</p> <ul style="list-style-type: none"> <li>• Development of analytical web platforms for analysis of AMR (Mikhail Edelstein, Institute of Antimicrobial Chemotherapy / Smolensk State Medical University, Russia) – 15 min</li> <li>• Global AMR research priorities and associated NIH initiatives and programs (Christine Sizemore, NIAD/NIH, US) – 15 min</li> <li>• Research priorities in AMR: pharma perspective ('Simcere Diagnostics', China) – 15 min</li> <li>• Natural Antibacterial Peptides - a Source of New Classes of Antibiotics: academic perspective: academic perspective (<i>Svetlana Dubiley</i>, Skoltech, Russia) – 15 min</li> </ul> <p><b>Open discussion and results *</b></p>	<p><b>Neuroscience and Cognitive disorders (Part III)</b> Skoltech, room 148 (Floor «1»)</p> <p><b>Moderator:</b> <i>Philipp Khaitovich</i> (Skoltech, Russia) Perspectives in neuroscientific data exchange: 'CoBrain-Analytics' as a prototypical platform for BRICS cooperation:</p> <ul style="list-style-type: none"> <li>• What is 'CoBrain-Analytics' Project and why do we need it now? (<i>Nikolay Pavlov</i>, Skoltech, Russia) – 10 min</li> <li>• How do we collect and store biomedical data? OpenEHR-based approach and protocols (<i>Andrey Zaika</i>, Skoltech, Russia) – 10 min</li> <li>• The analysis of EEG data (<i>Pavel Prikhodko</i>, Skoltech, Russia) – 10 min</li> <li>• The analysis of MRI data (<i>Michael Belyaev</i>, Skoltech, Russia) – 10 min</li> <li>• CoBrain Analytics for scientists: an example from genetics (<i>Philipp Khaitovich</i>, Skoltech, Russia) – 10 min</li> </ul> <p><b>Open discussion and results**</b></p>
<p><b>17:00 – 17:30</b></p>	<p><b>Final remarks on WG Statement, room 303 (Floor “3”)</b> Heads of delegations (5 min each)</p>	

\* First State Medical University named after I.M. Sechenova (Russia) and the pharmaceutical corporation Simcere Diagnostics (China) have expressed interest in conducting joint research in the field of metagenomic sequencing in order to identify microorganisms and study their genetic markers of antibiotic resistance in respiratory pathology.

\*\* The Skolkovo Institute of Science and Technology (Russia), the Center for Analysis of Large Biomedical Data at the Shanghai Institute of Biological Sciences of the Chinese Academy of Sciences (China) and the University of Stellenbosch (South Africa), have expressed interest in conducting joint research in the development of new clinical techniques for diagnosing common cognitive disorders and stratifying patients based on the integration of genetic and metabolic (including lipid) indicators selected using high throughput technologies.

## **TERMS OF REFERENCE**

### **The Working Group on Biotechnology and Biomedicine including Human Health and Neuroscience**

#### **Background Information**

In 2015 the Governments of the BRICS countries adopted the Memorandum of Understanding on Cooperation in Science, Technology and Innovation which among other issues included provisions for establishment of three Science, Technology and Innovation (STI) governing bodies: the BRICS Ministerial Meetings, the BRICS STI Senior Officials Meeting (SOM), and the BRICS STI Working Groups (WG).

Following the comprehensive dialogue held within these bodies, the BRICS Science Ministers at their 3rd BRICS STI Meeting (Moscow, October 2015) adopted the Moscow Declaration encouraging, in particular, cooperation in Biotechnology and Biomedicine, including Human Health and Neuroscience.

According to the BRICS Jaipur Declaration signed at the 4th BRICS STI Ministerial Meeting on October 8, 2016 (Article 16) and the revised BRICS Work Plan 2015-2018 (Article 5, Article 6.1), as well as the Action Plan 2016-2017, it was agreed to establish the Working Group on Biotechnology and Biomedicine including Human Health and Neuroscience (hereafter also WG Biomed) and convene the 1<sup>st</sup> meeting of WG Biomed in Russia on November 16-17, 2017.

Short title of the Working Group on Biotechnology and Biomedicine including Human Health and Neuroscience is WG Biomed.

#### **Goals and Task**

The main goals of WG Biomed are:

- to promote cooperation, exchange expertise and best practices in Biotechnology and Biomedicine, including Human Health and Neuroscience STI between BRICS countries;



- to support and promote initiatives in the field of Biotechnology and Biomedicine, including Human Health and Neuroscience which will lead to developing and implementing of joint projects and programs between BRICS countries to address common global and regional socio-economic challenges utilizing such drivers as science, technology and innovation

## Function

In pursuing tasks above, WG Biomed is mandated:

- to examine the priority areas in the field of Biotechnology and Biomedicine including Human Health and Neuroscience, which are of common interest for the BRICS countries in order to identify the potential for cooperation at bilateral and multilateral formats;
- to set up communication mechanisms among the members of WG Biomed to enhance information exchange on the issues relating to its activity.

WG Biomed will report annually to the BRICS STI Senior Officials Meeting (SOM) on main work results.

## Membership

Members of WG Biomed designated by the competent organizations of the BRICS countries based on their experience and expertise in developing and implementing R&D.

Experts representing scientific and industry community with specific competences relevant to a subject of the agenda may be invited to attend WG Biomed.

## Mode of Operation

The representatives of the host country will chair WG Biomed meetings.

Each side designates national focal point(s) to facilitate communication between the members of WG Biomed (Annex).

WG Biomed will normally meet at least once a year, onsite or virtually, unless otherwise decided by the members.

All the decisions shall be taken by consensus and in line with the BRICS rules of procedures.

The working language of WG Biomed is English.

Upon implementation of its tasks, the Terms of Reference may be reviewed at the request of one or more members.

## Annex

### Focal Points of BRICS WG Biomed

Country	Focal Point(s)
Brazil	Luiz Henrique M. do canto Pereira (focal point): luiz.canto@mctic.gov.br  Maguida Fabiana da Silva (alternate focal point): maguida.silva@mctic.gov.br
Russia	Magomed MintsaeV: mintsaeV-ms@mon.gov.ru
India	Arvind Kumar: arvind.kumar71@nic.in
China	Zheng Zeng: zeng@bjmu.edu.cn
South Africa	Glaudina Loots: Glaudina.Loots@dst.gov.za