

Development of Alternatives to Antibiotics

Research Gap Questionnaire on alternatives to antibiotics

This questionnaire aims to support the STAR-IDAZ initiative to develop a global research agenda on the development of alternatives to antibiotics by exploring experts' views on research priorities. The overall goal is to reduce the use of antibiotics in livestock production, decreasing the development of resistance to antimicrobials in livestock, while maintaining/enhancing production levels and controlling the occurrence of disease. A number of options targeting either the pathogen or the host or both are possible while the basis by which antibiotics promote enhanced growth also needs to be investigated.

Questions 1 and 2 aims at identifying the sort of products required and the associated research needs while Questions 3 and 4 focus on supporting scientific areas.

Based on the inputs collected through this survey, a deeper exploration into the research needs will be conducted at a workshop to be held in Bangkok, immediately after the 3rd Alternatives to Antibiotics Symposium (19th December 2019).

Ultimately your contribution will help to sustain and better coordinate research on the development of alternatives to antibiotics.

Individual experts are invited to complete this questionnaire. Please approach the responses from a global perspective.

Please answer with specific reference to the areas most relevant to your experience and expertise.

If you are not the most suitable person to provide the information requested, please consult with colleagues in your organisation.

Name of Respondent:

Organisation and position in that organisation:

Area of Expertise:

Please complete by filling in the boxes and return by the **11^h December 2019.**

Question 1. a) Research needs to identify alternatives to antibiotics acting directly on the pathogen, including establishing their mode of action

Please type your answers into the tables below and add more rows if needed:

	Research question What are we trying to achieve and why? What is the problem we are trying to solve? What is/are the ideal target product profile(s). <i>(A range of options have been suggested including phytochemicals, bacteriophage, antimicrobial peptides etc.)</i>	Research needs: “What are the main research needs requiring to be addressed to take the options identified above forward (these are likely to differ for the various options)?”	Possible solution routes: What approaches could/should be taken to address the research question?	Dependencies: What else needs to be done before we can solve this need?
1				
2				
3				

b) Research priorities

Research topic	Research Category (STA, LTA or BR)*¹	Justification

¹ ***STA**. - the studies needed to determine effective intervention strategies with a rapid impact (*short term applied*); **LTA**. - the studies most likely to reduce disease burden (economic and health) (*longer term applied*); **BR**. - the studies which may ultimately lead to effective intervention strategies or reduced disease burden (but without specific applications in mind) (*basic research*)

Question 2. a) Research needs to identify agents/compounds for their ability to enhance the hosts resistance to disease, including establishing their mode of action

Please type your answers into the tables below and add more rows if needed:

	Research question What are we trying to achieve and why? What is the problem we are trying to solve? What is the ideal target product profile? (This may include chemicals/phytochemicals, bacteria/bacterial products etc).	Research needs “What are the main research needs requiring to be addressed to take the options identified above forward (these are likely to differ for the various options)?”	Possible solution routes What approaches could/should be taken to address the research question?	Dependencies What else needs to be done before we can solve this need?
1				
2				
3				

b) Research priorities

Research topic	Research Category (STA, LTA or BR)*²	Justification

² * **STA**. - the studies needed to determine effective intervention strategies with a rapid impact (*short term applied*); **LTA**. - the studies most likely to reduce disease burden (economic and health) (*longer term applied*); **BR**. - the studies which may ultimately lead to effective intervention strategies or reduced disease burden (but without specific applications in mind) (*basic research*)

Question 3. a) Research needs to establishing how antibiotics work as growth promoters

Please type your answers into the table below and add more rows if needed:

	What areas need to be considered to identify the role of antibiotics in promoting growth - what are the research questions?	What are the main research needs requiring to be addressed to establish the role of antibiotics in promoting growth?	What are the possible solution routes to establish the role of antibiotics in promoting growth?	What else needs to be considered before we can solve this question
1				
2				
3				

b) Research priorities

Research topic	Research Category (STA, LTA or BR)* ³	Justification

³ * **STA**. - the studies needed to determine effective intervention strategies with a rapid impact (*short term applied*); **LTA**. - the studies most likely to reduce disease burden (economic and health) (*longer term applied*); **BR**. - the studies which may ultimately lead to effective intervention strategies or reduced disease burden (but without specific applications in mind) (*basic research*)

Question 4. a) Research needs relating to the role of the microbiome in the maintenance of health:

Please type your answers into the table below and add more rows if needed:

	Research question What are we trying to achieve and why? What is the problem we are trying to solve? What areas need to be considered to identify the role of the microbiome in maintenance of health?	Research needs What are the main research needs requiring to be addressed to establish the role of the microbiome?	Possible solution routes What approaches could/should be taken to address the research question?	Dependencies What else needs to be done before we can solve this need?
1				
2				
3				

b) Research priorities

Research topic	Research Category (STA, LTA or BR)*⁴	Justification

⁴ ***STA**. - the studies needed to determine effective intervention strategies with a rapid impact (*short term applied*); **LTA**. - the studies most likely to reduce disease burden (economic and health) (*longer term applied*); **BR**. - the studies which may ultimately lead to effective intervention strategies or reduced disease burden (but without specific applications in mind) (*basic research*)