Call for applications to assess efficacy of *Mycobacterium tuberculosis* vaccine candidates in a mouse or guinea pig model

Call identifier: TBVAC-Horizon Call 4 (of 4)

Call open: 13 January 2026

Application deadline: 31 March 2026

This call represents an opportunity to formally apply to assess the efficacy of pre-clinical TB vaccine candidates in head-to-head comparison animal models available within the TBVAC-Horizon project consortium. There are four separate models available: a mouse aerosol challenge model (Annex Ia) and a TB meningitis model (Annex Ib) performed by the Medicines and Healthcare products Regulatory Agency (MHRA), a low dose (Annex Ic) and an ultra-low dose (Annex Id) guinea pig challenge model performed by the UK Health Security Agency (UKHSA). The choice of model will be determined by the stage of the vaccine development, current preclinical data and evidence need for further candidate development. This is part of a gating and prioritisation process to identify new candidates to add to and diversify the preclinical vaccine pipeline (www.tbvacpathway.com). Details on the experimental setup and the parameters that are routinely assessed are described in **Annex Ia and b for the mouse models and Annex Ic and d for the guinea pig models**.

The objective of this round is to perform head-to-head comparison of the ability of new candidate TB vaccines to reduce bacterial load (CFU) in the mouse or guinea pig models of vaccination and pulmonary challenge with *Mycobacterium tuberculosis* (*M.tb*) H37Rv strain. A TB meningitis mouse model using *M.tb* HN878 in C57BL/6 mice is available to assess vaccine effects on extrapulmonary dissemination and brain bacterial burden. Efficacy will be compared with the BCG Danish 1331 (intradermal) reference standard as a positive control.
NOTE: this call is for preclinical vaccine candidates (BSL1 or BSL2 containment level). Prime-boost regimens involving BCG or another live vaccine candidates as the prime, would also be considered. The criteria and selection process for evaluation of submissions are described in **Annex II.**

In this current call, up to 4 candidate vaccine slots are available in the mouse challenge model and 3 slots in the TB meningitis model at MHRA, 2 slots in each of the guinea pig models (low dose and ultra-low dose) at UKHSA. Slots availability depends on the number of additional controls required plus one reference control group (BCG Danish 1331) as well as one unvaccinated control group. When submitting, please be aware that, **if your candidate vaccine is selected, you will need to agree to the following:**

- Accept the MTA in annex IV and sign within one month after notification. Due to the complexity of legal agreements between countries, institutes and the TBVAC-Horizon consortium, we are unable to deviate from the standard MTA provided. The consortium is offering this service at no cost other than shipping.
- All shipments must strictly comply with International Air Transport Association (IATA) regulations to ensure the safe and legal transport of materials.
- Have material ready for shipping **within one month after notification of selection**, for shipment directly after the MTA is signed.

- Provide all necessary documentation needed for submission to the Biosafety committee of the respective organization (MHRA or UKHSA) **within one month after notification of selection**:
    I. the use of genetically modified viral vectors or live vaccine strains (if applicable)
    II. approval at the originating institute regarding biocontainment conditions required for use of live organisms – vaccine candidate and parent organism (for live vaccine candidate only)

  Please be aware that these documents must be approved by the MHRA or UKHSA Biosafety committees (and if necessary the UK HSE) prior to shipment and setting up the experiment.
- Provide detailed information on the composition of the vaccine, such as: type and concentration of antigen or bacteria, adjuvant, excipients and impurities if known. And for use of the vaccine candidate in the mouse model: dosing concentrations, administration route and schedule are required.
- TBVI to share the selection of the successful vaccine candidate (name vaccine concept, institute, name principal investigator)
    I. with the TBVAC-Horizon Steering Committee, prior to the applicants being notified.
    II. on social media, after the applicant has confirmed accepting the selection.
- The results of the experiments can be published, regardless the outcome.

We anticipate the first experiment will be able to begin for this call from June 2026. The selected vaccine candidates must be ready to dispatch to MHRA or UKHSA by this date.

How to Apply:
Using the **application form** (**Annex III**), provide a scientific background (max. 4-pages) with relevant referencing to address the criteria (Annex II) on the vaccine/adjuvant/delivery route and delivery system.

Send the completed application form to info@tbvi.eu 31 March 2026 at the latest.

Outcome
All applicants will receive an email on the selection outcome of their submitted candidate by **6 May 2026 at the latest**. The successful applicants will be contacted with further information.

Overview of models available in current 4th call:

Annex	Model	
Ia	Standard mouse *M.tb* aerosol infection model	Prevention of disease
Ib	*M.tb* meningitis mouse model	Prevention of dissemination
Ic	Standard guinea pig *M.tb* low dose aerosol infection model	Prevention of disease
Id	Standard guinea pig *M.tb* ultra-low dose aerosol infection model	Prevention of infection

Annex Ia

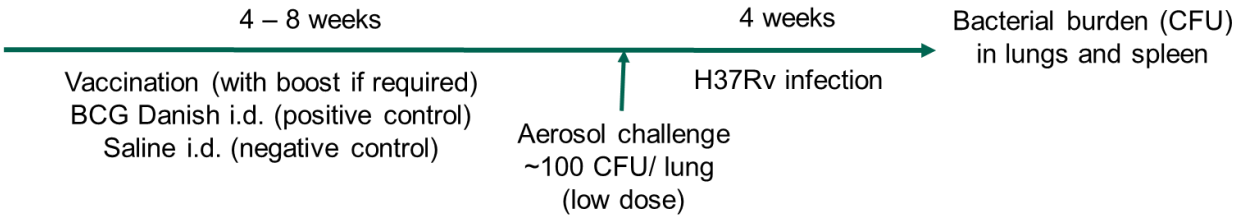
Standard mouse *M.tb* aerosol infection model

This mouse model is used for head-to-head evaluation of selected vaccine candidates, within and/or outside of the TBVAC-Horizon consortium. The experiment will be performed at the MHRA BSL2 (for vaccination prior *M.tb* infection) and BSL3 (post *M.tb* infection) laboratories in a designated facility for *in vivo* work. The following routes of vaccination can be used to assess protective potency of selected vaccine candidates when compared to intradermal (i.d) BCG vaccination: intradermal, subcutaneous, intranasal or aerosol.

Groups of minimum five female C57BL/6 mice (commercially available; about 8 weeks old with 15-20 g body weight) will be given saline or vaccinated with either BCG (lyophilised Danish 1331 reference standard, provided by MHRA; at about 3×10^4 CFU/mouse via i.d. route) or candidate vaccines (to be provided by the applicants). The route of administration and detailed immunisation schedule of selected candidates will be discussed and agreed with the successful applicants. A low dose (~100 CFU/ lung) aerosol challenge of *M.tb* (H37Rv, challenge stock provided by MHRA) is used to assess protective potency of vaccine candidates by measuring the bacterial burden in lungs and spleen of vaccinated mice at 4 weeks post *M.tb* infection.

Limited biological samples (e.g. frozen/formaldehyde-fixed tissues and/or splenocytes) from this animal model may be provided if requested by the successful applicants. Detail of requirement and preparation will be discussed and agreed prior to the start of the experiment.

A typical experiment is as shown below.



Annex Ib

M.tb meningitis mouse model (HN878 dissemination model)

This mouse model is used for the evaluation of selected TB vaccine candidates for their ability to limit extrapulmonary dissemination, including bacterial burden in the brain, following aerosol infection. The experiment will be performed at the MHRA BSL2 (for vaccination prior to *M. tuberculosis* infection) and BSL3 (post *M. tuberculosis* infection) laboratories in a designated in vivo facility.

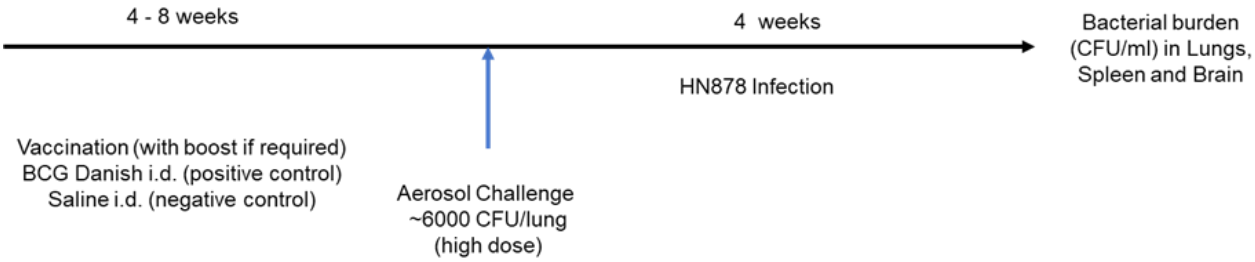
Female C57BL/6 mice (commercially available; approximately 8 weeks old, 15–20 gm body weight) will be given saline or vaccinated with BCG (lyophilised Danish 1331 reference standard, administered intradermally (i.d) provided by MHRA; at 3 x10^4 CFU/mouse via Intradermal route) or candidate vaccines provided by the applicants. The route of administration and detailed immunisation schedule of selected candidates will be discussed and agreed with the successful applicants.

Following vaccination, mice will be challenged by the aerosol route with *Mycobacterium tuberculosis* HN878 at a high dose (approximately 6,000 CFU deposited per lung). Under these defined conditions, infection results in a high pulmonary bacterial burden with dissemination to extrapulmonary sites, including the brain. Mice will be culled at 18–19 days post-challenge, and bacterial burden (CFU) will be determined in the lungs, spleen, and brain.

This model enables head-to-head comparison of vaccine candidates for their ability to reduce pulmonary infection and limit dissemination to the central nervous system relative to BCG vaccination.

Limited biological samples (e.g. frozen or formalin-fixed tissues) from this model may be provided upon request. Details of sample requirements and preparation will be discussed and agreed prior to the start of the experiment.

Schematic overview of the TB meningitis mouse model using aerosol HN878 challenge in C57BL/6 mice.



Annex Ic

Standard guinea pig *M.tb* low dose aerosol infection model

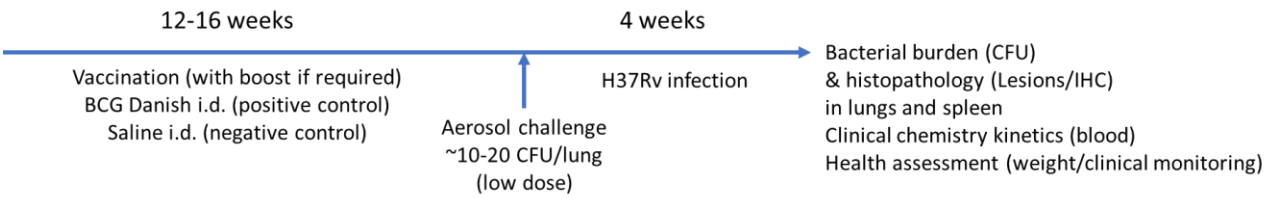
This guinea pig model is used for head-to-head evaluation of selected vaccine candidates, within and/or outside of the TBVAC-Horizon consortium. The experiment will be performed at the UKHSA BSL2 (for vaccination prior *M.tb* infection) and BSL3 (post *M.tb* infection) laboratories in a designated facility for *in vivo* work. The following routes of vaccination can be used to assess protective potency of selected vaccine candidates when compared to intradermal (i.d) BCG vaccination: intradermal, intramuscular, subcutaneous, intranasal, sublingual or aerosol.

Groups of eight female Dunkin-Hartley guinea pigs (commercially available; >250 g in body weight) will be given saline or vaccinated with either BCG (lyophilised Danish 1331 reference standard provided by UKHSA; at about 5×10^4 CFU/guinea pig via the i.d. route) or candidate vaccines (to be provided by the applicants). The route of administration and detailed immunisation schedule of selected candidates will be discussed and agreed with the successful applicants. As the experiment will be designed for head-to-head comparison of different vaccine candidates, some degree of compromising in immunisation schedule may be required.

A low dose (~10-20 CFU/lung) aerosol challenge of *M.tb* (H37Rv NCTC 7416, challenge stock provided by UKHSA) is used to assess protective potency of vaccine candidates by measuring both the bacterial burden and histopathology in lungs and spleen of vaccinated guinea pigs at 4 weeks post *M.tb* infection. Histopathology analyses will include characterising and quantifying the proportion of each category of TB granulomas present in representative tissue sections for each animal, and use of immunohistochemistry analyses to locate and quantify host cell types (T cells, B cells, macrophages and neutrophils) and *M.tb* (LAM) present in each granuloma. Animal health and body weight will be assessed and scored throughout the study. Clinical chemistry analyses on small blood samples will be regularly collected throughout the study to determine the kinetics during vaccination and infection. Each round of experiment will be performed testing up to 2 candidates.

Limited biological samples (e.g. frozen/formaldehyde-fixed tissues and/or splenocytes) from this animal model may be provided if requested by the successful applicants. Detail of requirement and preparation will be discussed and agreed prior the start of the experiment.

A typical experiment is as shown below.



Annex Id

Standard guinea pig *M.tb* ultra-low dose aerosol infection model

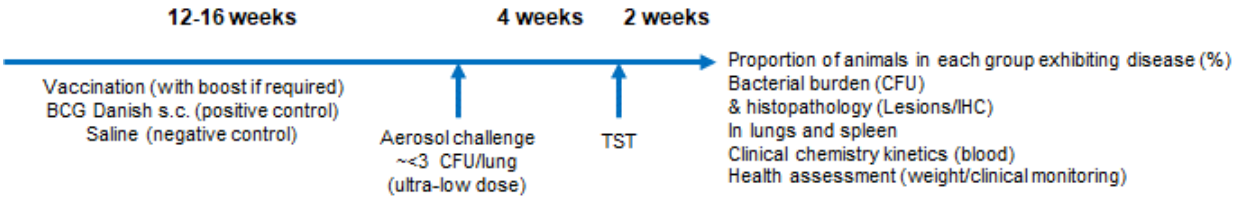
This guinea pig model is used for head-to-head evaluation of selected vaccine candidates, within and/or outside of the TBVAC-Horizon consortium. The experiment will be performed at the UKHSA BSL2 (for vaccination prior *M.tb* infection) and BSL3 (post *M.tb* infection) laboratories in a designated facility for *in vivo* work. The following routes of vaccination can be used to assess protective potency of selected vaccine candidates (prevention of infection) when compared to subcutaneous (s.c.) BCG vaccination: intradermal, intramuscular, subcutaneous, intranasal, sublingual or aerosol.

Groups of twenty female Dunkin-Hartley guinea pigs (commercially available; >250 g in body weight) will be given saline or vaccinated with either BCG (lyophilised Danish 1331 reference standard to be provided by UKHSA; at about 5×10^4 CFU/guinea pig via the s.c. route) or candidate vaccines (to be provided by the applicants). The route of administration and detailed immunisation schedule of selected candidates will be discussed and agreed with the successful applicants. As the experiment will be designed for head-to-head comparison of different vaccine candidates, some degree of compromising in immunisation schedule may be required.

An ultra-low dose (<3 CFU/lung) aerosol challenge of *M.tb* (H37Rv NCTC 7416, challenge stock provided by UKHSA) is used to assess protective potency of vaccine candidates by measuring a significant reduction in the proportion of animals that exhibit disease as a result of infection (prevention of infection). Rate of infection across groups in the study will be determined by Tuberculin skin test (TST) reaction across the unvaccinated group. Bacterial burden and histopathology in lungs and spleen of vaccinated guinea pigs will be assessed at 6 weeks post *M.tb* infection. Histopathology analyses will include characterising and quantifying the proportion of each category of TB granulomas present in representative tissue sections for each animal, and use of immunohistochemistry analyses to locate and quantify host cell types (T cells, B cells, macrophages and neutrophils) and *M.tb* (LAM) present in each granuloma. Animal health and body weight will be assessed and scored throughout the study. Clinical chemistry analyses on small blood samples will be regularly collected throughout the study to determine the kinetics during vaccination and infection.

Limited biological samples (e.g. frozen/formaldehyde-fixed tissues and/or splenocytes) from this animal model may be provided if requested by the successful applicants. Detail of requirement and preparation will be discussed and agreed prior to the start of the experiment.

A typical experiment is as shown below.



Annex II

Evaluation criteria & process

Selection procedure involves the assessment of the following criteria, against data specific to the vaccine candidate being considered for the call:

A. Go /no go criteria

I. For models described in Annex Ia-c:

In *in vivo* mammalian model show:

- Existing safety data in immunocompetent model.
  Of note: for live vaccine candidates existing safety data on residual virulence in immunocompromised SCID mice is desirable.
- Existing immunogenicity data.
- Existing protection data (demonstrating equivalent to, or better than BCG or other comparator).
  Guinea pig model exemption: justified rationale why protection data in mice are not available (if applicable). For example; vaccines which act via a CD1 induction.

II. Go/no go criteria for model described in Annex Id:

- Existing protection data in a prevention of infection mouse model (demonstrating better than BCG or other comparator).
- Existing protection data in a prevention of disease in vivo model (demonstrating better than BCG or other comparator).
- Justified rationale why protection data in mice are not available (if applicable). For example; vaccines which act via a CD1 induction.

B. Priority setting criteria

The proposed vaccine candidates that meet the go/no go criteria will be assessed against the criteria listed below and will be ranked in order of priority by the Portfolio Advisory Committee (PAC) of TBVAC-Horizon whose members are independent of laboratories that may apply for slots in the experiments. The final priority ranking will be approved by the TBVAC-Horizon Steering Committee (SC).
The criteria which need to be met or will influence decisions for the selection of a candidate are described below:

Priority setting criteria are concerning the following 5 topics and specified in the table below:

1. **Mucosal administration preferred**: to maximize alignment with the focus of the TBVAC-Horizon project. However, other administration routes are eligible for both models, see Annex 1a and b.
2. **Innovation / diversification**: the project is offering potential advantages over existing technologies and/or ensuring portfolio diversity
3. **Feasibility:** the project could lead to a new vaccine provided it meets quality, safety and efficacy criteria. i.e. manufacturing must be scalable for clinical use.
4. **Relevance:** the project is compatible with unmet medical needs

5. **Business environment** of the project can ensure successful access to market

Selection procedure:

- Go / no go criteria have to be passed
- Ranking by PAC, with hierarchy in the selection along 2 layers: First "Layer 1" criteria (specified in the table below) are used for ranking. If those criteria do not lead to clear ranking, "Layer 2" criteria will be used.

These priority setting criteria are further specified below:

1. Innovation / diversification			
a	**Scientific concept:** the choice of the vaccine composition is scientifically documented and relevant to the expected impact of the vaccine candidate.	**Layer 1**	
b	**Mechanism of action and vaccine delivery system** (including route of administration): the mechanism of action is defined and the delivery system proposed is expected to be efficient (e.g. adjuvant) and scalable.	**Layer 1**	
c	**Technology:** the technology used to process the vaccine / antigen(s) is explained and it is substantiated why the vaccine is (expected to be) effective and innovative.	**Layer 1**	
2. Feasibility			
a	**Laboratory**: the lab facilities are adapted to early development and formulation of the candidate.	**Layer 1**	
b	**Industrial**: GMP facilities are available/identified and adapted to large scale production, including adjuvant formulation where applicable.		**Layer 2**
c	**Preclinical and clinical development** are feasible and can be conducted by a development team properly established (commitment, competency capability, management, staff, skills…).	**Layer 1**	
d	**Regulatory pathway** is defined/identified and no major hurdles identified (acceptable safety profile based on available data).		**Layer 2**
3. Relevance			
a	**The concept vaccine aligns with the overall strategy** of the TBVAC-HORIZON project, including diversity of the portfolio.		**Layer 2**
b	**The public health need** is recognized (target population is defined) and the public health impact is measurable.		**Layer 2**
4. Business environment			
a	**Intellectual property**: IPRs are robust or do not represent an issue, FTO is not an issue.		**Layer 2**
b	**Budget:** resources are available (at least to take the project to next stage gate).		**Layer 2**
c	**Partnership** necessary to conduct the project (to next stage gate) is identified.		**Layer 2**
d	**Market access** is supported by a (robust) business plan.		**Layer 2**

The above criteria are derived from the Stage gate A criteria of the TB vaccine development pathway (www.tbvacpathway.com). This can be used as further guidance.

Annex IIIa

TBVAC-Horizon application form

Call name: **Call for applications to assess efficacy of *Mycobacterium tuberculosis* vaccine candidates in a mouse or guinea pig model; Call 4 (of 4)**

Application deadline: 31 March 2026

Applicant information	
Organization name	
Applicant/contact person name	
Email address	
Phone number	
Vaccine candidate	
Vaccine components (including adjuvant/delivery system if applicable) and dosage (concentration and volume per dose)	
Preferred route of administration and immunisation schedule	
Model	
Which model are you applying for (remove the one that is not applicable)	Standard mouse *M.tb* aerosol infection model OR *M.tb* meningitis mouse model (HN878 dissemination model) OR Standard guinea pig *M.tb* aerosol infection model OR Standard guinea pig *M.tb* ultra low dose aerosol infection model
Summary of the concept vaccine (incl. adjuvant/delivery system if applicable) *Please add references where relevant in case part of the work has been published; max 4 pages*	
Address the go/no go criteria as well as layer 1 priority setting criteria described in Annex II in detail. Of note, for evaluation of existing protection data, please use the template in Annex IIIb. *Shortly address the Layer 2 criteria if known (optional).*	
If selected, we will be timely providing all information and materials needed to enable the experiment itself as well as preparatory activities, including biosafety approval.	
Place, Date	Applicant name and signature

To apply, please send this completed form to info@tbvi.eu before 31 March 2026.

Annex IIIb

Existing protection data

Design of the vaccination and challenge experiment:

- Full description of candidate vaccine(s) tested [including components]
- Route of administration (for priming and booster(s))
- Challenge strain and dose used
- Timelines:
    - day(s) of vaccine administration
    - day of challenge

Results after challenge:

Group	**N/group**	**Log_{10} CFU/lung**	**Std Dev**	**Log_{10} CFU/Spleen**	**Std Dev**
Negative control (e.g. Saline/PBS)					
Positive control (e.g. BCG)					
Group x (full description, can refer to design of the experiment)					
Group y					
Group z					
Etc.					

Please include statistical significance in std format, e.g. * P<0.05; ** P<0.05 including description of the statistical analysis test/post-test performed (*e.g. Two-way ANOVA, Tukey's multiple comparison*)

Annex IV

Draft Material Transfer Agreement

Provider *(Full Institutional Coordinates/Address):*

……

……

Recipient *(Full Institutional Address, incl. indication of Recipient's lab):*

……

……

Provider and *Recipient* herewith acknowledge the following conditions for the use of

……..

[precise, complete, exhaustive description and quantification of material/samples/specimens]

The construct(s) listed above and any biological materials derived from these shall be referred to as *"Material"* in this *Agreement*. *Material* shall include progeny and unmodified derivatives, where

– "progeny" shall mean any unmodified descendant from the *Material* (e.g. virus from virus, cell from cell, organism from organism), and

– "unmodified derivatives" shall mean any substance created by *Recipient* which constitutes an unmodified functional subunit or product expressed by the *Material* (e.g. cloned/subcloned *Material*, purified or fractioned subsets of the *Material*, proteins expressed from DNA/RNA Material).

1) The *Material* will exclusively be used within or by *Recipient*'s immediate research group and will not be supplied to any other laboratory, within or outside *Recipient*'s premises, unless explicit written permission has been obtained from *Provider*.

2) *Recipient* will be solely responsible for the evaluation and all other undertakings provided under this *Agreement*, and will use and analyse the *Material* at *Recipient's* own risk.

3) *Provider* shall in no event be liable for any use of the *Material* by *Recipient*, or any loss, claim, damage, or any liability of whatever kind of nature, which may arise from, or in connection with, this *Agreement*, or the use, handling or storage of the *Material*. *Recipient* will hold *Provider* and its directors, officers, employees and students harmless and indemnify them for any loss through *Recipient*'s use, handling, storage or other activity related with the *Material*, except in case of damages arising from a wilful act or gross negligence on the part of *Provider*.

4) The *Material* is experimental in nature and is provided without warranty of merchantability or fitness for any particular purpose or any other warranty, express or implied. *Provider* makes no representation or warranty that any use of the *Material* will not infringe any patent or intellectual property right of any third party.

5) The *Material* will be used solely for non-commercial research purposes and will not be used in any studies other than as follows, and solely within the project **"TBVAC-HORIZON", funded by the European Union's HORIZON program under Grant No. 101080309, in the study**
[Instate Study Description]
.....
.....

6) The *Material* is made available to *Recipient* solely for research under the research purpose (cf. 5). *Recipient* agrees to not use the *Material* for any other, commercial or non-commercial, purpose. The *Material* must not be used in human subjects.

7) Any derivative of the *Material* made in *Recipient's* laboratory will be made available to *Provider* under conditions similar to those set forth in this *Agreement*.

8) If the *Material* is referred to in any publication, then correct reference will be made to the work of *Provider*. All rights of *Provider* to publish remain unaffected by the transfer of the *Material*.

9) *Recipient* shall use the *Material* in compliance with all laws and governmental regulations and guidelines applicable to the *Material*.

10.1) *Recipient* shall be entitled to own any inventions to the extent that these result from his own independent use of the *Material*, provided however,

a) that it shall grant *Provider* a free, non-exclusive licence for internal research purposes with respect to any such inventions,

10.2) To the extent that both *Provider* and *Recipient* have contributed to an invention with respect to the use of the *Material*,

a) they shall determine inventorship details in accordance with applicable patent law(s), taking into account the respective contribution of the parties to said invention,

11) *Recipient* is allowed to use the *Material* during its research under the research purpose. *Provider* reserves the right to require immediate return or immediate destruction of the *Material* in case *Recipient* does not comply with its obligations under this *Agreement*.

12) This MTA shall be construed in accordance with the governing law of England and Wales .

In witness hereof the parties have this *Agreement* be signed by:

RECIPIENT

Recipient's scientist:.....Date: .....
Signature of *Recipient*'s scientist: …….....

Name and Position of Authorized Institution Representative:.....
Date: .....
Signature of Authorized Institution Representative: …….....

PROVIDER

Provider: ……Date: .....
Name and Position of
Authorized Institution Representative: …….
Signature: …….....