UK - Korea Multi-omics Based Research for Precision Medicine Research Initiative 2019

MRC UK GUIDANCE FOR APPLICANTS

This guidance document is for UK applicants wishing to apply to the 'UK-Korea Multi-omics Based Research for Precision Medicine Research Initiative 2019' research call. This guidance supplements the standard MRC Guidance for Applicants. Please consult the standard MRC Guidance for Applicants for information such as preparing the budget for your proposal.

This call-specific guidance document provides additional information specific to this call. Where guidance in the present document differs from that in the standard MRC Guidance for Applicants, you should follow the guidance in this present, scheme specific, document.

Please also see the separate Guidance on preparing the 'Case for Support' and 'Gantt Chart'.

It is important that applicants read the call-specific documents. These include important additional information that is not covered in the UK Call text. It is also important that your Korean colleagues are aware of all relevant guidance provided by the Korean Ministry of Science and ICT (MSIT) and the National Research Foundation of Korea (NRF).

UK and Korean researchers should discuss ethics and Intellectual Property before fully developing their proposal.

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1. Important application information

The UK Medical Research Council (MRC), the Korean Ministry of Science and ICT (MSIT) and the National Research Foundation of Korea (NRF) are pleased to invite proposals to the UK-Korea multi-omics based precision medicine research initiative. This activity is being run under the umbrella of the UK's Fund for International Collaboration (FIC). FIC aims to enhance the UK's excellence in research and innovation through global engagement. It focuses on bilateral and multilateral partnerships with global research and development (R&D) leaders and is administered by UK Research and Innovation (UKRI).

This initiative will provide funding for **one** high-quality collaborative research consortium focusing on multi-omics based research for precision medicine.

The objective is to deliver research funding for an internationally competitive and innovative collaborative partnership between researchers from South Korea and the UK that will enable the pursuit of shared research interests.

MRC and MSIT/NRF share the view that stratification, underpinned by a sound understanding of disease, will enable us to pin point novel targets for the development of new treatments and biomarkers that tell us more about disease progression and response to treatment within appropriate patient groups. Our shared aim is to improve our understanding of how to tailor treatments and interventions to the individual needs of people living with a wide range of diseases and conditions. This is an international and long-term aim. We cannot tackle this problem in isolation, we must bring together the necessary funds and expertise by pooling resources.

Aim

This initiative will provide significant funding for a UK-Korea precision medicine research consortium focussed on addressing a disease for which there is a strong case for scientific advancement and major unmet clinical need, with the aim of:

- Supporting large-scale, interdisciplinary multi-ethnic, multi-omics based collaborative research.
- Providing new insights into disease mechanisms that will enable better tailoring of existing treatments and pave the way for the development of new treatments, diagnostics and care pathways.
- Enhancing existing partnerships and developing new partnerships between the UK and Korea in the area of precision medicine.
- Strengthening the strategic relationship between the UK and Korea.

Objectives and scope

The objective is to deliver research funding for **one** internationally competitive and innovative collaborative partnership between researchers from Korea and the UK that will enable the pursuit of shared research interests.

Precision (also stratified or personalised) Medicine promises new prevention and treatment methods optimised for individual or groups ('strata') of patients characterised by clinical and laboratory information, health records, lifestyle or demographic factors. Research and innovation in Precision Medicine will discover and increase understanding of disease subtypes and provide new insights into disease mechanisms, to enable better tailoring of existing treatments, and pave the way for the development of new treatments, diagnostics and care pathways. Stratification can include e.g. response to treatment, disease subtype or mechanism, endotypes, disease risk, progression rate and/or prognosis. Molecular signatures from multi-omic data (e.g. genomics, transcriptomics, proteomics, metabolomics etc) have the potential to more accurately or effectively define disease subtypes, predict likely drug/therapy response, drug resistance or increased risk of adverse drug reactions (pharmacogenetics). Appropriate samples (tissue, biological fluids, etc) and suitable cohorts will need to be identified to underpin robust findings with the greatest clinical potential.

Applications may address a number of key challenges presented by stratification such as methodology and study design (including reproducibility and statistical design); data handling, integration, and analysis; diverse therapeutic options; and application of research findings between populations with demographic differences, including e.g. ethnicity, age and socioeconomics. Patient involvement is strongly encouraged at all stages of the application. Some evidence of the potential economic benefit of the approach should be included, within the appropriate healthcare system, but full health economic studies are not required within the proposal. A plan for the sharing of Korean and UK multi-omics data across the consortium should be included. Applicants should identify the potential value to future industry Research and Development, with a plan to engage suitable partners if appropriate

Applications from any disease area are welcomed including, but not limited to, cancer, metabolic diseases, immune or inflammatory diseases, heart diseases, degenerative brain disease neurological, sensory and mental health disorders. Applicants should make a strong case for scientific advancement within an area of major unmet clinical need.

The goals of the project funded through this call should be:

- **Overall goal:** Development of multi-ethnic precision medical technology through analysis of multiple omics (genomics, proteomics, metabolomics, etc.) for diseases with major unmet clinical need

- **Stage 1 goal (1 Sept 2019 - 31 Dec 2022, UK and Korea):** Achievement of multi-omics information for multi-ethnic populations in severe diseases (such as cancer, metabolic diseases, immune diseases, heart diseases, degenerative brain disease, etc.) and identification of multiple 'omics' markers through information integration

2nd stage goal (1 Jan 2023 - 31 Dec 2024, Korea only): Development and utilization of multi-omics precision medical technology based on multiple omics markers
Researchers will be responsible for developing their own collaborations and, once a research proposal is developed, UK and South Korean applicants must apply jointly for funding.

All projects must include a principal investigator (PI) based at an eligible UK research organisation (RO) and a PI based at an eligible South Korean RO. Partners must work together to prepare a joint application including a joint Case for Support. Once a research proposal is developed, UK and Korean applicants must apply separately to their respective funding agencies.

UK and Korean applicants must apply separately to their respective funding agencies by 24th April 2019 for the funding component requested within each country, but this must be based around a common research plan and vision. **Both partners must therefore submit an identical joint Case for Support (including the one page methodology annex) and separate option one page Gantt chart written in English to the MRC and NRF. The submission to NRF should be via NRF's Integrated Research Support System https://ernd.nrf.re.kr).** Failure to submit a valid application to both funding agencies will invalidate both submissions.

As there will be a single Case for Support, it is vital that it provides full details of the work proposed for both the UK and Korean components.

An identical version (in English) of the call-specific Justification of Resources template should also be submitted to both MRC and NRF.

UK applicants must submit to the MRC via the UKRI Joint electronic Submission (Je-S) System (https://je-s.rcuk.ac.uk). The Je-S submissions must be received by 16:00 UK local time on the day of the deadline. UK applicants must complete all sections required for a standard research council grant proposal. However, the Case for Support format and structure is specific to this call (see the call specific Guidance on preparing the 'Case for Support' and 'Gantt Chart' document). In addition, the Justification of Resources must be on the specific template for this call. Further guidance can be found in the standard MRC Guidance for Applicants as well as in this specific MRC UK Guidance for Applicants for this call.

UK and Korean researchers should discuss ethics and Intellectual Property before fully developing their proposal.

Start date and duration

On the UK side, projects must on 1 January 2020. Projects must be three years in duration and have completed by 31 December 2022.

On the Korean side, projects must start on 1 September 2019. The project will be divided into two stages:

- First stage: 1 Sept 2019 – 31 Dec 2022
- Second stage: 1 Jan 2023 – 31 Dec 2024

- After the completion of the first stage, the Korean team can move to the second stage subject to satisfactory assessment of the first stage outcomes. However, the proposal should clearly outline the entirety of the research plans across both stages.

Although the UK component of the consortium will not receive funding for the full duration of the project through this initiative, the expectation is that the proposal should clearly outline the entirety of the research plans for both stages, and clearly detail roles and responsibilities within the full project period.

Please refer to the standard MRC Guidance for Applicants for information on what the UK starting procedure entails; please inform the relevant support staff in your organisation of this requirement to ensure the project starts on time.

Funding available

Funding for the project awarded under this call for proposals will be jointly provided by the MRC and MSIT/NRF. The MRC will fund the UK component of the proposal at the standard 80% of the full Economic Cost (fEC), and MSIT/NRF will fund the Korean component of the proposal.

In total, up to approximately £9m will be made available for this initiative. The funding agencies intend to use these available funds to support **one** consortium, subject to quality.

MRC will make up to £2m available to cover the UK component of the one research project selected for funding under this call. The MRC considers proposals requesting a contribution from the MRC of between £1.5m and £2m would allow for the research outlined in this call to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting less than £1.5m where fully justified. UK based applicants may therefore request up to a maximum of £2m at 80% fEC to cover the UK component of the research project. The MRC will provide funding under standard arrangements and at 80% of the full Economic Cost (fEC). **The UK element of funding will not cover UK PhD studentships or requests for capital items.**

A MSIT/NRF contribution of 11,160,000,000 South Korean Won (~£7.26m) will be made available to fund the South Korean collaborators. The Korean spending profile should be:

Stage 1:

- September 2019 – May 2020: ₩2,000,000,000 over 9 months
- June 2020 - December 2020: ₩1,160,000,000 over 7 months
- January – December 2021: ₩2,000,000,000 over 12 months
- January – December 2022: ₩2,000,000,000 over 12 months

Stage 2:

- January – December 2023: ₩2,000,000,000 over 12 months
- January – December 2024: ₩2,000,000,000 over 12 months

After the completion of the first stage, the Korean team can move to the second stage subject to satisfactory assessment of the first stage outcomes. However, the proposal should clearly outline the entirety of the research plans across both stages.

Online networking database

MRC, MSIT and NRF will create an online networking database to compile a list of UK and Korean researchers who are interested in finding possible collaborators for this call. Participation in the online networking database is optional. Please see section 3.1 below for further information.

Expression of interest submission

Researchers planning to submit to this scheme are asked to submit a short expression of interest (EoI) online form to the MRC by 10 April 2019. Please see section 3.2 below for further information.

Key dates

Activity	***Date***
Call opens	4th March 2019
Optional submission of online networking form	From 4th March 2019 and by 9am 1st April 2019
Expression of interest (to MRC only) by	10th April 2019
Full application submitted to MRC via the Joint Electronic System (Je-S) by the UK PI on behalf of the collaborators. Korean Principal Investigators must submit their application (including an identical 'case for support' and 'justification of resources' both written in English) on NRF's Integrated Research Support System https://ernd.nrf.re.kr	24th April 2019 (4pm UK time for the UK Je-S submission) (6pm Korean local time for the Korean NRF submission)
Assessment of proposals	April-August 2019
Funding decision	August 2019
Projects start	Korea: on 1 September 2019 UK: on 1 January 2020
Projects end	Korea: 31 December 2024 UK: 31 December 2022

2. Who can apply?

2.1 Types of research organisations (ROs)

The UK principal investigator (PI) MUST be based at one of the following, as per standard MRC eligibility criteria:

- Higher education institutions
- Independent research organisations
- Government funded organisations (other than MRC funded units and institutes)
- MRC units/institutes
- University units (former MRC units)

For the UK participants, standard UKRI eligibility criteria as described on the UKRI website will apply. Applications cannot be accepted from UK principal investigators in commercial organisations.

The Korean PI MUST be based at an eligible Research Organisation. For the Korean participants, standard NRF eligibility criteria as described on the NRF R&D website will apply. Research Organisations that are eligible to apply to the NRF, for example university units, independent research organisations and university medical centres may apply to this call.

See MRC Guidance for Applicants for further details about eligible institutions. This call will follow standard MRC eligibility criteria.

The funders are not seeking to support partners outside of the UK and Korea through this initiative. Please contact international@mrc.ukri.org if you are planning to involve co-investigators from a third country in your proposal.

2.2 People named on the grant

This call will fund a partnership between UK and Korean based researchers working in the area of multi-omics based precision medicine. It is important to note that the proposal should be jointly developed by a UK Principal Investigator (PI) and a Korean PI.

Rules on multiple applications and Korean PI time commitment

- The UK and Korean Principal Investigators (PIs) may only submit one application to this scheme as PI.
- The Korean PI cannot be involved as Co-Investigator (Co-I) in other applications submitted to this call.
- The Korean PI must commit at least 50% of their time to the research project.
- The UK PI may be involved in other applications if listed as Co-I.
- UK Co-Is may be involved in more than one application.

UK based researchers should be aware of the following MSIT/NRF Korean eligibility requirements:

- In Korea, each scientist may only participate in up to five research projects supported by Korean government (up to three projects as PI and up to 2 projects as Co-investigators).
- Korean scientists cannot commit over 100% of their time to their research projects.
- Under this present initiative, the Korean PI **must commit at least 50% of their time to the consortium**. Therefore, Korean scientists, who have already committed over 50% of their time to other research projects cannot apply as a PI to this call.

The Principal Investigators (PIs)

For awards under the MRC – MSIT/NRF scheme there will be a UK PI and a Korean PI. The expectation is that the UK PI and associated costs for UK research would be funded by the MRC, while the Korean PI and associated costs for research in South Korea would be funded by MSIT/NRF.

The PIs are responsible for the intellectual leadership of the research project and for the overall management of the research. The PIs will be the funding agencies' main contact for the proposal. For administrative purposes when completing the UK Je-S form, you will only be able to input one PI; this will need to be the UK PI. The Korean PI will need to be listed as a co-investigator (Co-I) on Je-S.

MRC-funded individuals can hold more than one grant at a time. The award of a grant does not guarantee any further commitment to funding by the MRC or MSIT/NRF.

MRC will consider proposals from any UK-based researcher who is based at an eligible research organisation and can demonstrate that they will direct the proposed research and be actively engaged in carrying it through.

See standard MRC Guidance for Applicants for further details about UK PI eligibility.

For the Korean participants, standard MSIT/NRF eligibility criteria as described on the NRF R&D website will apply. Korean applicants must be competent in oral and written English.

Co-investigators (Co-Is)

The PIs may be supported by a number of UK and Korean Co-Is named on the application. A Co-I assists the PI in the management and leadership of the research project.

All UK and Korean PIs and Co-Is MUST have verified Je-S accounts and must be added to the Je-S form under co-investigator. Please see section 3.5, below, 'Creating a Je-S application' for information on how to add an organisation on Je-S.

While, it is essential that all Korean PIs and Co-Is are added to the Je-S form, Korean costs should **not be** represented on the Je-S form.

Please note: The lead UK applicant should liaise with any non-UK based Co-investigators as early as possible in the application process to ensure that they set-up their verified Je-S account as a matter of priority. Co-Investigators without Je-S accounts, should be encouraged to visit the Je-S website (https://je-s.rcuk.ac.uk) to gain access to the Je-S System.

Further information when creating a Je-S account can be found in section 3.5 of this document.

Other support

For information on other parties involved in research including project partners, please see section 1 in the standard MRC Guidance for Applicants.

If a UK project partner is from industry or if Korean investigators or project partners are from industry, then applicants must follow the guidance relating to the MRC Industrial Collaboration Agreement (MICA).

3. Application process

3.1 Optional use of online networking database

MRC, MSIT and NRF will create an online networking database to compile a list of UK and Korean researchers who are interested in finding possible collaborators for this call. Participation in the online networking database is optional.

If you would like to share your details with the research community in the UK and Korea, please complete the online networking template form in English. Researchers completing the form should be aware that these details will be made public.

A copy of the online networking database will be made available online on the MRC call page from Monday 11th March (UK time) and will be updated once per week until Monday 1st April (UK time) with all the networking information received before 9am (UK time) on the date of the update

3.2 Expression of interest submission

Researchers planning to submit to this scheme are asked to submit a short expression of interest (EoI) online form by 10 April 2019. Please note, this step does not form part of the review process and the MRC will not undertake eligibility checks at this point; applicants should not await a response from the MRC following EoI submission, but simply continue with the development of the full proposal to be submitted by the deadline of 24 April 2019. The MRC will use the expression of interest to help prepare for the review process.

Applicants are not expected to submit an expression of interest to MSIT/NRF.

3.3 Full application summary

The UK deadline for full applications is **16:00 local time on Wednesday 24th April 2019.** https://je-s.rcuk.ac.uk/JeS2WebLoginSite/Login.aspx

UK and Korean applicants must apply separately to their respective funding agencies by 24th April 2019 for the funding component requested within each country, but this must be based around a common research plan and vision. The application must be JOINTLY prepared. **Both partners must therefore submit an identical joint Case for Support (including if applicable a one page methodology annex) and separate optional one page Gantt Chart written in English to the MRC and NRF. The submission to NRF should be via NRF's Integrated Research Support System https://ernd.nrf.re.kr).** Failure to submit a valid application to both funding agencies will invalidate both submissions.

As there will be a single Case for Support, it is vital that the joint application form provides full details of the work proposed for both the UK and Korean components.

An identical version (in English) of the call-specific Justification of Resources template should also be submitted to both the MRC and NRF.

UK applicants must submit to the MRC via the UKRI Joint electronic Submission (Je-S) System. The Je-S submissions must be received by 4pm BST on the day of the deadline. UK applicants must complete all sections required for a standard Research Council Grant proposal. Further guidance can be found in the standard MRC Guidance for Applicants as well as this scheme-specific Guidance for Applicants.

The following documents must be included in the UK application:

- **A completed Je-S form**. All UK and Korean Principal and Co-investigators MUST be included. This form reflects the UK costs, so while the Korean investigators should be included, hours charged for Korean investigators should be 0. Korean costs should be captured in the NRF online application.
- **A cover letter (optional)**. If you have submitted a similar or related proposal to any of the UK Research Councils in the last year, please provide details in a cover letter including what has changed since the previous submission. The covering letter can be used to cover details such as conflicts of interest and names of conflicted experts that you request not to be used as reviewers by the MRC.
- **A jointly prepared Case for Support**, including a one-page annex (optional but recommended) detailing the methodology and experimental design aspects – please see the separate call-specific Guidance on preparing the 'Case for Support' and 'Gantt Chart' available on the MRC call website.
- **Gantt Chart**, one page (optional but recommended) using the attachment type 'Letter of Support' on Je-S.
- **CVs and publication lists** (uploaded individually) for each of the UK and Korean Principal Investigators, Co-investigators and named research staff on the application.
- **Justification of Resources** (using the call-specific JoR template) for the total costs requested for the project (both UK and Korean costs should be fully justified)

- **Pathways to Impact** – please see section 2.2.5 of the standard MRC Guidance for Applicants.
- **Data Management Plan** – please see section 2.2.8 of the standard MRC Guidance for Applicants.
- **MRC Industry Collaboration Agreement (MICA) form and Heads of Terms (if required)** – This is needed if industry is involved in the UK and/or in Korea. Please see the relevant MRC webpage for further guidance.
- **UK National Health Service (NHS) costs (if required)** – please see section 3.5 of the standard MRC Guidance for Applicants.
- **Use of animals overseas form(s) (if required)** please see section 4.4.6 of the standard MRC Guidance for Applicants and the use of animals overseas section of the National Centre for the Replacement, Refinement & Reduction of Animals in Research (NC3Rs) website. This attachment should be uploaded as a 'Letter of Support'.
- **Letters of support (dated and signed):**
    - from the UK Research Organisation(s) demonstrating support for the proposed research project.
    - from the Korean research organisation(s) demonstrating support for the proposed research project.
    - from any project partner where an in-kind payment is being contributed.
    - A **human participation/human tissue letter** signed by both PIs when human/human tissue research is proposed and/or when the Korean partner or another third party (ANY organisation other than the host UK RO) is responsible for recruitment of people as research participants and/or providing human tissue. See section 5.5.1 of this Guide for Applicants for further information.
    - **Use of Animals letter** (if applicable, 2 sides of A4 max) – see section 5.6.1 of this Guide for Applicants for information. This should be signed by both PIs.
    - **Use of Stem cells letter** (if applicable, 2 sides of A4 max) – please see section 5 of the standard MRC Guidance for Applicants for further information.

All attachments should be completed in 11 point Arial typeface, with a minimum of 2cm margins. Applications will not be accepted where smaller or narrow typefaces have been used.

Page lengths (A4 size):

Document	***Maximum length (Maximum)***
Covering letter	2 pages
A jointly prepared Case for Support (English version)	12 pages (including illustrations & references) + optional 1 page for methodology annex
Gantt Chart (using the attachment type 'Letter of Support' on Je-S).	1 page
CV	2 pages per CV
List of Publications	1 page per List of Publications
Justification of Resources	Please refer to the call-specific template for information about page limits
Pathways to Impact	2 pages
Data Management Plan	3 pages
Letter of supports (dated and signed)	2 pages each

Further guidance and details for all of the above content can be found in the standard MRC Guidance for Applicants and the call specific Guidance on preparing the 'Case for Support' and 'Gantt Chart'.

3.4 The Case for Support and Justification of Resources

The Case for Support

A jointly prepared Case for Support, written in English, must be uploaded as a PDF to the Je-S application. The English version of the case for support may be up to twelve A4 pages in length (including illustrations & references) plus an optional 1 page methodology annex, using Arial 11pt typeface with margins of 2cms on all sides. An identical copy in English of this PDF must be submitted by the Korean PI to NRF.

There are specific requirements for what should be included in the Case for Support for this call. Please see the call specific Guidance on preparing the 'Case for Support' and 'Gantt Chart'.

The case for support should also address the assessment criteria outlined in section 4 of this scheme-specific Guidance for Applicants.

Justification of Resources (JoR)

Please complete the call-specific JoR template available on the call webpage, it must be written in a minimum font size of Arial, 11 point, with margins of at least 2 cm, justifying that the resources requested are appropriate to undertake the research project. The call-specific template includes details of the page limits.

You must complete one Justification of Resources (JoR) document justifying both the UK costs and Korean costs and attach it to your application under "Justification of Resources". The JoR must contain a breakdown and explanation of the costs requested for this funding scheme by each partner taking into account the requirements outlined under the 'Funding available' section of this document.

The JoR should explain why the resources requested are appropriate for the research proposed, taking into account the nature and complexity of the research proposal. It should not be simply a list of the resources required.

In addition to the standard content for the Justification of Resources, applicants should include:

- the UK value of resources requested by the UK researchers.
- the UK value of resources requested by the Korean partner.

This is so that the value of the total funds requested for the research project, can be assessed.

The costs on both the UK and Korean side should be separate with a clear justification of each cost.

An identical version (in English) of the call-specific Justification of Resources template should be submitted to both MRC and NRF.

3.5 Creating a Je-S account and application

To submit full proposals, please login to your Je-S account via https://je-s.rcuk.ac.uk, using the username and password you have chosen (if you do not have a Je-S account, or have forgotten your password, please see the guidance provided further below).

Please note that ONLY the UK Principal Investigator creates the Je-S application, any collaborating Investigators from other research organisation (UK or Overseas), are added to the application depending on their involvement and responsibilities whilst working on the project.

New Je-S users: In order to gain access to the Je-S System, create an account.

Important information when creating a Je-S account:

- **All PIs and Co-Is (this is both UK, Korean and any third country) involved in a grant project will need to be registered on Je-S. It is important to register on Je-S at least two weeks before the deadline as the process takes time to complete.**
- It is recommended that overseas Co-Investigators should ensure that their Research Organisation has been added to the Je-S database before they commence the Je-S account creation process.
- The create account process will require the applicant to accept the terms and conditions using the Je-S System, before the applicant can proceed with the account creation.
- Applicants should choose to 'Skip the ORCID identifier' as this is NOT required for the purposes of being added to the proposal as an 'Investigator', priority is to create a verified Je-S account to enable the Investigator to be included within the Je-S application.
- Investigators should select the account type 'Applicant on a Standard or Outline Proposal' (within the Research Proposals section).

Should the overseas Co-Investigators not be able to select their RO when attempting to create their Je-S account, MRC recommend that the Investigator emails the Je-S Helpdesk jeshelp@rcuk.ac.uk, with the full name and address details of the Overseas Organisation and they will contact you with further instructions.

Creating your Je-S application:

- Select '**Documents**' from left hand menu list from your Je-S account home page

- Select **'New Document'** from within the Functions/create section of your documents page

The '**Call/type/mode**' listed below can only be selected when the call opening date has been reached (until the advertised closing date **Wednesday 24th April 2019).**

All MRC funding calls close at **16:00 local UK time**, on the advertised closing date.

- Select council: **MRC**
- Select document type: **Standard Proposal**
- Select scheme: **Research Grant**
- Select call/type/mode (optional): **UK-Korea Multi-omics 2019**
- Select **'create document'** option

Please telephone Je-S Helpdesk 01793 444164 should you require any assistance with the Je-S system.

Project details: UK PI's project start date should be **1 January 2020.**

3.6 Budgets

It is the responsibility of the Korean and UK PIs to ensure the conditions of their respective funder are understood.

All the UK and Korean PIs/Co-Is must be inputted onto the Je-S form. However, any costs for Korean PIs/Co-Is must be inputted with the correct hours but with the hours charged as £0. The Korean partner costs will be recorded in the Justification of Resources (call-specific JoR template) that can be downloaded from the MRC webpage for this call.

Full Economic Costing (FEC)

UK-based research costs will be funded at 80% of the Full Economic Cost (FEC).
Please see section 3. Resources – Full Economic Costing in the standard MRC Guidance for Applicants for information on FEC.

Funding available

	MRC funding
Research costs: Staff – directly incurred post (e.g. Researchers, Technicians) Staff – directly allocated posts (PI and Co-I time)	 Yes Yes
Equipment below £10,000: Costs should be claimed as 'Other Directly Incurred Costs'	Yes
Equipment above £10,000	No
Other Directly Incurred Costs Including (e.g. Consumables, Sub-Contracting costs)	Yes

Research studentships	No
Research assistants/postdoctoral researchers/research technicians	Yes
Studentships (degree programmes)	No
Travel and subsistence for exchange/mobility activities	Yes
Cost of workshops, meetings etc. Should be costed as 'Other Directly Incurred'.	Yes

Equipment:

Capital costs above £10,000 cannot be funded via this call and therefore any capital costs requested will not be accepted.

Costs for 'small equipment' under £10,000 (such as consumables) are accepted by MRC from UK applicants. These should be listed within the 'Other Directly Incurred Costs' section on Je-S.

Spending obligations

Due to the tight time scales of this call, if you are successful UK ROs will need to adhere to strict spending requirements. For this call, the end date of the proposed research should be no later than **31 December 2022.** The UK payment profiles are likely to be slightly irregular for this scheme. If you have any questions about the payment profiles, please contact international@mrc.ukri.org.

4. Assessment process and criteria

To be funded, proposals must be internationally competitive and at a standard equivalent to that normally expected to be supported by each funding organisation.

Each proposal will be peer reviewed by the MRC and MSIT/NRF in parallel using academic experts. Both the UK and Korean peer reviewers will be asked to review the entire proposal including stage 1 and stage 2 of the proposed research.

- The MRC will externally peer review all applications, and all applicants will be offered the opportunity to provide a written response to those reviews. This will be followed by a UK panel meeting.
- The Korean peer review process will include an interview of the Korean Principal Investigator in line with standard MSIT/NRF processes. It is envisaged that all Korean Principal Investigators will be interviewed, but NRF and the MRC reserve the right to adjust this step of the process if a high number of proposals are submitted to the call.

The funders will then jointly agree upon the successful consortium.

	Korea	UK
Peer review:	Review of proposals by Korean review panel through oral presentation (interview)	Review of proposals by UK peer reviewers and panel
Final selection:	Joint MSIT/NRF-MRC decision	

Key assessment criteria for both the UK and Korean peer review of proposals will be:

Evaluation Heading	Details
Research quality and scientific potential (35%)	- Design and feasibility of the project plan - Novelty and innovation - Fit to call - Clarity of research objectives
Research environment and people (30%)	- Track record(s) of the investigators in their fields - Partnership: including strength and clarity of collaborations and opportunities provided, quality of the project management structure proposed, and the added value of the UK-Korea collaboration - Quality and suitability of the research environment and of the facilities - Value for money for Korean and UK science
Significance and impact of the research (35%)	- Contribution potential of the outcomes to scientific community, industry, and nation - Importance and feasibility of delivering proposed research outcomes - Strategies for securing intellectual property - Roadmap for technology transfer and commercialisation - Identification of realistic potential improvements to human or population health - Contribution to relieving disease/disability burden and/or improving quality of life - Identification of potential impacts of research and plans to deliver these

5. Agreements and ethics

5.1 Collaboration Agreement

As the research projects will be carried out by multiple research organisations and project partners, the basis of collaboration between the organisations and project partners, including ownership of intellectual property (IP) generated during the project and rights to exploitation, and costs of IP management [this is not an eligible cost to MRC], is expected to be set out in a formal Collaboration Agreement between the research organisations involved. It is the responsibility of the research organisations to put such an agreement in place before the research begins. **The terms of collaboration shall not conflict with MRC and MSIT/NRF terms and conditions**.

Arrangements for collaboration and/or exploitation must not prevent the future progression of academic research and the dissemination of research results in accordance with academic custom and practise and the requirements of the funding bodies. A temporary delay in publication is acceptable in order to allow commercial and collaborative arrangements to be established.

Details of key issues included in the Collaboration Agreement, for example management of IP, should be detailed in the 'consideration of ethical, governance and Intellectual Property issues around the project' section of the Case for Support.

5.2 Intellectual Property

Intellectual Property Rights (IPR) means any copyright and related rights, patents, rights to inventions, registered designs, database rights, design rights, topography rights, trademarks, service marks, trade names and domain names, trade secrets, rights in unpatented know-how, rights of confidence and any other intellectual or industrial property rights of any nature including all applications (or rights to apply) for, and renewals or extensions of such rights and all similar or equivalent rights or forms of protection which subsist or will subsist now or in the future in any part of the world.

Ownership of intellectual property (IP) generated during the project and rights to exploitation, as well as any costs regarding management of IP, are expected to be agreed between the collaborating research organisations before the research begins, unless otherwise stated. It is up to the respective UK and Korean research teams to determine in advance how any exploited IP will be divided amongst the partners. Details of this agreement must be included in the Collaboration Agreement (as above).

Agreements must not conflict with the Research Councils or NRF terms and conditions. Any agreements in place between a research organisation and their respective funding organisation must be adhered to, including the sharing of IP costs or benefits. Any IP sharing agreements in place between a research organisation and their national funding body would be expected to apply only to the IP share of that research organisation.

The MRC will follow its standard rules/terms and conditions regarding IP, please see relevant sections of the UKRI and MRC terms and conditions for research grants at https://mrc.ukri.org/funding/guidance-for-mrc-award-holders/information-for-award-holders

5.3 Material Transfer Agreements

Collection and exchange of material may occur between collaborating institutions, as necessary, in strict compliance with the legislation in effect in both countries.

5.4 Ethics

Any research involving humans/human tissue and/or animals (whether undertaken in the UK or Korea) must comply with legislation in both the UK and Korea. It must also comply with relevant policies and guidance of MRC and NRF. NRF supports and respects the guidelines and regulations edited by Ministry of Science and ICT (MSIT), Ministry of Health and Welfare and academic associations in the field of biomedical science, Korea.

It is the absolute responsibility of the PIs and the ROs to ensure that appropriate ethical approval is granted and adhered to, and that no research requiring ethical approval is initiated until it has been granted.

The ethical information sub-sections in the Je-S proposal form should be completed to give details of any human participation, research using animals, genetic and biological risk **in all countries** (stating clearly which country/countries the relevant research will be done in), and should state any UK and Korean ethical committee approvals required. Section 5 of the standard MRC Guidance for Applicants has recently been updated to reflect amendments to this section of the Je-S form.

Applicants must be clear in their applications in which country the proposed research involving humans and/or animals will take place and must fully complete the ethical information section for research taking place in either country.

MRC ethics guidance

Applicants must comply with all of the MRC's relevant policies and guidance regarding the use of humans/human tissue and/or animals in research.

Approval(s) for the research detailed in an MRC grant proposal must be granted by the appropriate bodies before any work can commence. Institutions, applicants and grant holders have absolute responsibility for ensuring that the necessary approvals are granted for the research considered by MRC and NRF. NRF supports and respects the guidelines and regulations edited by Ministry of Science and ICT (MSIT), Ministry of Health and Welfare and academic associations in the field of biomedical science, Korea.

The principal investigator/ research organisation must be prepared to furnish the MRC with a copy of the ethical approval, and any correspondence with the committees, if requested by

the council. The principal investigator must notify the MRC if a regulator or a research ethics committee requires amendments that substantially affect the research question, methodology or costs to the extent that the project is no longer the same as that approved for funding by the MRC.

Please see section 3.3 of this Guidance for Applicants for a summary of ethical documents required.

Korean ethics guidance

Korean researchers must adhere to the MRC and NRF guidance and policies on ethics. NRF supports and respects the guidelines and regulations edited by Ministry of Science and ICT (MSIT), Ministry of Health and Welfare and academic associations in the field of biomedical science, Korea.

5.5 Use of humans/human tissue

5.5.1 MRC guidance

A signed and dated letter of support must be attached to the proposals when human/human tissue research is proposed (in either country). The letter should be titled 'Human participation/human tissue letter' and MUST be signed by both PIs. It must be clear from the letter which human/tissue research is being proposed in which country.

The letter should state that all applicants will comply with the relevant MRC policies and guidance in the standard MRC Guidance for Applicants and call-specific Guidance for Applicants. The letter should also acknowledge that the PIs understand that MRC's current policy for research involving humans to take place overseas, is that **for research to be undertaken internationally, both local and UK ethical approval is required**. The letter should also state that the PIs understand that for clinical studies involving human participants and/or patients in the UK or overseas, appropriate consent must be obtained.

In addition, where the Korean partner or another third party (ANY organisation other than the UK RO) is responsible for recruitment of people as research participants and/or providing human tissue, details should be included in the case for support and the 'Human participation/human tissue letter' MUST include confirmation of the following:

• which international partner is involved and that the partner has agreed to recruit the participants/provide tissue
• that what is being supplied is suitable for the research being undertaken
• that the quantity of tissue (where relevant) being supplied is suitable, but not excessive for achieving meaningful results.

The letter of support must be an integral part of the application (as an attachment) and must focus on the proposal it accompanies.

5.5.2 Korean guidance

Korean researchers must adhere to the MRC and NRF guidance and policies on use of human/human tissue. NRF supports and respects the guidelines and regulations edited by Ministry of Science and ICT (MSIT), Ministry of Health and Welfare and academic associations in the field of biomedical science, Korea. Applicants must submit appropriate documentation as requested within the MRC guidance in addition to relevant permits for research conducted in Korea.

5.6 Use of animals

5.6.1 MRC guidance

Applicants must ensure that all of the proposed research, both that in the UK and in Korea, will comply with the principles of the MRC common guidance on responsibility in the use of animals in bioscience research and NC3Rs Guidelines: Primate Accommodation, Care and Use.

In particular, UK institutions should be aware of the following aspect of the guidance relating to research or collaboration outside the UK:

"When collaborating with other laboratories, or where animal facilities are provided by third parties, researchers and the local ethics committee in the UK should satisfy themselves that welfare standards consistent with the principles of UK legislation (e.g. the Animals (Scientific Procedures) Act 1986), and set out in this guidance, are applied and maintained.

Where there are significant deviations, prior approval from the funding body should be sought and agreed. International research should also be compliant with all relevant national and local regulatory systems in the host country where the research is to be conducted."

Investigators proposing the use of animals (in either country) should read the guidance and:

- provide a signed and dated letter with the heading 'Use of Animals letter' (uploaded as a Letter of Support to the Je-S application) which MUST be signed by both the UK and Korean PIs stating that:
    - all animal research (undertaken in either country) will adhere to all relevant national and local regulatory systems in the UK and Korea
    - they will follow the guidelines laid out in the responsibility in the use of animals in bioscience research. document and ensure that work is carried out to UK and Korean standards. If primates are used they should also confirm that they will follow the NC3Rs Guidelines: Primate Accommodation, Care and Use
    - Korean organisations should be accredited by AAALAC International
    - before initiation of the proposed research work, appropriate approvals from institutional and/or central animal ethics committees will be obtained for experimental protocols to be adopted in their projects. Successful proposals

may be expected to provide copies of these permissions before funding is released.
    - details on which animal research will take place in which country (UK, Korea or elsewhere) and through which funder the resources are being sought. Applicants should include confirmation that animal welfare standards at these institutions meet the requirements outlined above.
- If applicable, applicants should also submit the 'Use of Animals Overseas' form(s) - please see section 4.4.6 of the standard MRC Guidance for Applicants and the use of animals overseas section of the National Centre for the Replacement, Refinement & Reduction of Animals in Research (NC3Rs) website. This attachment should be uploaded as a 'Letter of Support'.

All applicants are required to comply with Section 4: 'Proposals involving animal use' of the standard MRC Guidance for Applicants. Applicants should detail in the letter any additional information which was not included in the proposal document but which is pertinent to the animal research proposed and which the funders should be aware of.

In addition, researchers should be reminded that sufficient information and justification regarding any animal research proposed, regardless of country, must be provided in the proposal order to allow full peer review to take place.

5.6.2 Korean guidance

Korean researchers must adhere to the MRC and NRF guidance and policies on use of animals. NRF supports and respects the guidelines and regulations edited by Ministry of Science and ICT (MSIT), Ministry of Health and Welfare and academic associations in the field of biomedical science, Korea. Applicants must submit appropriate documentation as requested within the MRC 'Use of animals' section in addition to relevant permits for research conducted in Korea.

5.7 Use of Stem Cells

5.7.1 MRC guidance

Please see section 5 of the standard MRC Guidance for Applicants for further information.

If applicable, a signed and dated letter with the heading 'Use of Stem Cells letter' (uploaded as a Letter of Support to the Je-S application) should be submitted and MUST be signed by both the UK and Korean PIs.

Korean researchers must adhere to the MRC and NRF guidance and policies. NRF supports and respects the guidelines and regulations edited by Ministry of Science and ICT (MSIT), Ministry of Health and Welfare and academic associations in the field of biomedical science, Korea.

6. Terms and conditions

For the grant's terms and conditions please follow the link:
https://www.ukri.org/funding/information-for-award-holders/grant-terms-and-conditions/

Starting procedures
The UK side of the grant must start by **1 January 2020**. The start of the grant may NOT be delayed beyond this date.

Please note that due to the requirement to start by 1 January 2020, the normal three months start period rules outlined in the UKRI Terms and Conditions RGC4, does not apply to this project.

Ethical requirements
It is the responsibility of the principal investigator and the research organisation to ensure that appropriate ethical approval is granted for this study and adhered to, and that no research requiring ethical approval is initiated until it has been granted.

MRC current policy for research involving humans is that for research to be undertaken overseas, both local and UK ethical approval is required.

For clinical studies involving human participants and/or patients, appropriate consent must be obtained.

For grants that include the use of animals, the responsibility in the use of animals guidance should be adhered to, and in particular: 'When collaborating with other laboratories, or where animal facilities are provided by third parties, researchers and the local ethics committee in the UK should satisfy themselves that welfare standards consistent with the principals of UK legislation (such as the ASPA) and set out in this guidance are applied and maintained.'

The principal investigator/research organisation must be prepared to furnish the Medical Research Council with a copy of the ethical approval, and any correspondence with the committees, if requested. The principal investigator must notify the Medical Research Council if a regulator or a research ethics committee requires amendments that substantially affect the research question, methodology or costs to the extent that the project is no longer the same as that approved for funding.

The grants must comply with the ethical sections within this call-specific Guide for Applicants and within the standard MRC Guidance for Applicants.

Government support
This award is dependent on continuing government commitment for this initiative and continuing match from the partner funder. In the event that this support is withdrawn, the Medical Research Council reserve the right to terminate the award.

Requests for extensions to awards
Due to financial restraints of the Fund for International Collaboration, grant extensions will only be considered under exceptional circumstances (in line with the Equality Act 2010) and will

require the Medical Research Councils' agreement on a case-by-case basis. The Research Organisation remains responsible for compliance with the terms of the Equality Act 2010 including any subsequent amendments introduced while work is in progress; and for ensuring that the expectations set out in the Medical Research Councils' statement of expectations for equality and diversity are met.

Collaboration Agreement

A Collaboration Agreement is required for this project.

As the grant is associated with more than one research organisation the basis of collaboration between the organisations, including the allocation of resources throughout the project and ownership of intellectual property and rights to exploitation is required to be set out in the formal collaboration agreement. It is the responsibility of the lead research organisation to put such an agreement in place within six months of the start of the Korean component of the project. The terms of collaboration agreements must not conflict with the NRF's and MRC's terms and conditions.

Given the importance of expanding collaboration among researchers, principal investigators from the UK and Korea must intermittently report and share the progress with each other and the Korean co-funders.

7. Contacts and guidance

Please read the:

- UK call text
- the scheme specific UK Guidance for Applicants (this document)
- the standard MRC Guidance for Applicants
- the scheme specific guidance on preparing the Case for Support and Gantt Chart.
- any relevant MSIT/NRF guidance, including the Korean call text.

An identical version (in English) of the call-specific Justification of Resources template should be submitted to both MRC and NRF.

Applicants may wish to use the online networking database – please see the online networking database section of this document for details.

For further information, UK applicants should contact: international@mrc.ukri.org

For further information, South Korean applicants should contact: nrfbio@nrf.re.kr