- AIRC -

Associazione Italiana per la Ricerca sul Cancro

Call for Proposals

on Innovative tools for cancer risk assessment and early diagnosis

«5 per Mille»

Guide to Presubmission preparation

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Foreword

The Associazione Italiana per la Ricerca sul Cancro (AIRC) is inviting applications for grants funded with revenues from "5xmille" donations. The aim of this call is to finance a few outstanding <u>programs</u> that can have significant impact on our ability to generate molecular knowledge in oncology, transferring it to the clinical setting within the duration of the project.

This year, the Call is focused on areas of early diagnosis of tumors and cancer risk assessment.

While projects are invited with a «bottom-up» spirit on the basis of investigator-driven proposals, AIRC expects all applications to fulfil three **mandatory requirements**:

- 1. Highly innovative content
- 2. Mechanism-based, hypothesis-driven proposal
- 3. Transferability of basic discoveries to the clinic, at least in pilot studies, during the funding period

In keeping with these requirements, clinical or epidemiological proposals, based on descriptive morphological studies and/or known molecular markers, and solely or preponderantly relying on already established technologies, tools and knowledge, will be excluded from the review process.

All proposals that meet the three conditions listed above will be exclusively evaluated on the basis of their scientific merit and excellence following these review criteria:

- i. Quality of the research project, with particular emphasis to points 1 and 2 above
- ii. Transferability to the clinic, at least in pilot studies, during the funding period.
- iii. Quality of the applicant(s) and of the host Institution(s)
- vi. Feasibility (including demonstrated capability of assembling teams with all required expertise for carrying out the program).

Notwithstanding the broad and «bottom-up» nature of this call, some types of proposals are excluded and will not receive consideration:

- 1. Basic Research- or Preclinical Research-only proposals, which do not contemplate actual transfer to the clinical setting within the duration of the grant.
- 2. Clinical Research-only proposals, without an innovative laboratory research component.
- 3. Proposals including any type of Phase III and Phase IV clinical trials.
- 4. Proposals that could be financed through the regular calls of AIRC (investigator-driven grants, start up grants, MFAG).
- 5. Generic «brain gain» programs, aimed at bringing Italian researchers currently working abroad back to Italy, if such programs are not embedded in a proposal that meets all other requirements of the call.
- 6. Generic proposals on wide subjects (such as organ-oriented programs, proposals on general aspects of cancer biology) which are not hypothesis-driven and which do not portray measurable outputs.
- 7. «Core» funding for research and/or clinical institution.
- 8. Open-ended programs unlikely to be accomplished within the specific time frame of 5 years.

Given the sizable amount of the grants and their broad and ambitious scope, it is expected that proposals have a multi-disciplinary approach and be structured under the leadership and coordination of a single proponent/coordinator (hereafter referred to as the **Principal Investigator**, **PI**), with the

participation of several Group Leaders with complementary and integrated expertise in specific areas essential for reaching the unique, common goal of the entire program.

Proposals must be hypothesis-driven; applicants should clearly describe the working model(s) and the specific contribution of each participating group to test the underlying hypotheses.

The call is open to single- and multi-institutional applications. In this latter case, a cogent case will have to be made that the outstanding goals of the proposal can only be achieved through such a setting.

Eligibility criteria

PIs awarded a "Molecular Clinical Oncology 5xmille" grant in 2010 cannot submit a proposal as PIs within this Call.

The PI and all Group Leaders should have achieved scientific independence and leadership, and **should have a strong track record** as demonstrated by last-author publications in high level peer-reviewed journals.

The PI and all participating Group Leaders, regardless of their nationality, must operate in a non-profit Italian Institution at the time of the application submission. AIRC reserves the right to reject proposals in which the PI or any participating group leader, even if jointly affiliated to an Italian and a foreign Institution, do not meet criteria for continuous presence in the Italian institution.

Funding

Programs will be funded through the revenues of the "5 per Mille" donations received by AIRC through the competent Ministries of the Italian State.

Five to ten successful applications will be funded for a maximum of 5 years and will not renewable beyond this time frame. On average, each 5-year program will be awarded up to 10 million \in total.

Support must be requested for the first three years only through the appropriate budget forms (only in the full submission phase). The fourth and fifth year of the program will be funded only if funds are available to AIRC and if the PI demonstrates productivity and scientific accomplishments during the course of a site visit at the end of the third year.

Funding can be requested in all categories of expenses, including:

- i. Personnel (for the duration of the project)
- ii. Services, supplies and all other direct research costs
- iii. Instruments, including technological platforms necessary for the project. The acquisition of new platforms will be carefully evaluated during the reviewing process
- iv. Indirect costs and overhead

The PIs of the winning programs will be officially notified by AIRC of the total budget granted. The PI is the sole responsible for the year by year allocation of the budget to each participant, and the sole individual accountable for it. AIRC will provide funds to each participating group following the detailed indications of the PI on the allocation of the budget. In the case of multi-institutional grants, funds will be directly transferred to each single Institution. Transfer of funds between Institutions is not allowed. <u>AIRC will closely monitor the scientific progress and the administrative handling of the grants</u>.

How to apply

In the initial phase of this Call, applicants must submit a Presubmission enquiry (see the "Guide to Presubmission preparation" for specific instructions). It is expected that a maximum of 10-15 presubmission enquiries will be selected at this stage. The selected applicants will then be invited to submit a full proposal. Presubmission enquiries and full proposals will be evaluated by an international panel of external reviewers (see "The Review Process", below).

The review process

Applications from researchers who meet the eligibility requirements undergo a peer review process that ensures a fair, independent and expert evaluation of their scientific quality. Only the most scientifically meritorious applications, identified through the peer review process in a rigorous and objective manner, will be funded. The Review Process will start with AIRC appointing a Study Section composed of up to 12 outstanding foreign experts with complementary expertise covering the various research areas of the applications received. This Study Section will be in charge of the entire review process. The Study Section will select the best Presubmissions (a maximum of 10-15) according to the review criteria described in the Foreword. For the evaluation of the full applications, the Study Section might recruit additional non-Italian-only reviewers with the needed expertise. In all stages of the review process, reviewer assignments will be made in compliance with conflict of interest and appearance of conflict rules to ensure a review free from inappropriate influence (e.g. applications cannot be assigned to reviewers who are former mentors, collaborators, relatives etc. of the applicants).

Deadlines

Deadlines for applications (by midnight, Central European Time, of the indicated dates)

Presubmission enquiry (mandatory)	online form release date	February 28, 2011
	electronic submission deadline	April 11, 2011
	notification of results	May 30, 2011
Full proposals (only if presubmission approved)	electronic submission deadline	July 25, 2011
	paper submission (postmark) deadline (*)	July 27, 2011
	notification of results	November 30, 2011

(*) For full proposals only, the following pages are required in paper format too:

- The Title Pages of the PI and of each Group Leader, with their signatures and the signature of the legal representative
- The Abstract
- The budget forms of the PI and of each Group Leader, with their signatures
- The bioethical requirements page of the PI and each Group Leader, with their signatures
- The clearance from the Ethics Committees for research in humans from each applicable Institution

Send all paper documentation to the following address (separate shippings are allowed in case of multi-institutional proposals):

AIRC Direzione Scientifica via Corridoni 7 20122 Milano

***Paper documentation marked with "draft" on the side is not valid. Please print the requested pages only after completion of the full submission online ***

Please take note of all the deadlines listed above: there will be no further communications in this regard. CALL DEADLINES ARE STRICTLY ENFORCED: grant presubmissions, proposals and renewals will not be accepted after expiration of the relevant deadlines.

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Renewal for second year of funding	online form release date	April 16, 2012
	electronic submission deadline	June 4, 2012
Renewal for third year of funding	online form release date	April 15, 2013
	electronic submission deadline	June 3, 2013
Renewal for fourth year of funding,	online form release date	April 14, 2014
and Progress Report (scientific and administrative)	electronic submission deadline	June 3, 2014
Renewal for fifth year of funding	online form release date	April 13, 2015
	electronic submission deadline	June 3, 2015
Final report	online form release date	July 1, 2016
(scientific and administrative)	electronic submission deadline	September 1, 2016

Deadlines for renewals, progress- and final reports (mandatory)

Yearly renewals of the awarded grants will be subordinated to the availability of funds through net receipt of "5xmille" revenues.

In addition, renewals for the fourth and fifth year of funding will depend on whether the awardees pass an *ad hoc* site visit, demonstrating productivity and scientific accomplishments.

At the end of the fifth year, grant recipients must submit a Final administrative report. AIRC will be obliged to send a copy of this report to the competent Ministries. All grant recipients will be given instructions on the appropriate format to use for submitting the necessary financial statements to AIRC.

The grant is subject to recoupment in any of the following situations:

- if the Final administrative report is based on false statements;

- if no Final administrative report is submitted;

- in the absence of receipts and payment accounts for the amounts supplied during an audit;

- under any circumstances where the PI fails to comply to the terms and conditions indicated in this Call and in all official communications sent by AIRC relative to the awarded grant.

The Final administrative report and all supporting financial documentation (receipts etc) must be related to the research proposal carried out between December 31st 2011 and December 30th 2016.

AIRC reserves the right to check at any time such documentation, which must be kept in the appropriate offices of the host Institutions for 10 years after the end of the grant.

Every recipient Institution will be responsible for its share of financial support and the relative financial report.

Guide To Presubmission Preparation

The Principal Investigator (PI) of the 5xmille grant application is the researcher who is primarily responsible for the proposed research plan and who will coordinate the work of all Group Leaders. PIs are in charge of completing and submitting the entire application, gathering all the necessary information from each Group Leader.

Researchers already holding an AIRC grant such as an IG can apply to this Special Program.

Click on the «Area Ricercatori» in the site <u>www.airc.it</u>. Log on in the «Area Riservata» with your username (Codice Utente) and password. First-time applicants must register in our system: please click on «Registrazione» and provide the requested information. The registration will be confirmed by e-mail and a username and password will be provided. Please note that only the PI of the research proposal must register and have an account in our site. The PI must not share his/her access codes with anyone (Group Leaders etc).

To launch the Presubmission form for the first time click on «Bandi», then on «5 per mille», then on «Submissions», and finally on «Apply». Subsequently, to access the presubmission in progress, click on "My submissions" and then click on "Enter" in the 5xmille box.

- Once in the Index page, a list of forms that need to be filled out is provided: click on each one and fill in all the mandatory fields (marked by an asterisk), then click on «Confirm» after completing each form. For your convenience, the incomplete/complete state of each form will be visually indicated on the right side of the list by a red or green flag, respectively.
- The forms can be filled out at different times and the work can be interrupted/resumed at will.
- A number of forms, including the Presubmission research plan, will have to be submitted as PDF file (see later). Each file cannot exceed 2Mb. Any file exceeding such a limit will be automatically rejected by the system. These sections must be written using an A4 format, single spaced, with margins not less than 2 cm and a font not smaller than 12 point (preferably Palatino, Times, Arial). Do not exceed the page limit indicated for each section.
- The presubmission can be viewed and printed in its incomplete/complete state anytime, by clicking on «Create PDF Draft» at the bottom of the page: the system will automatically produce a PDF Draft.
- Once the presubmission is complete and ready to be submitted, please click on «Submit». Please be aware that after clicking on "Submit" it will not be possible to make any further modification.
- The complete presubmission proposal is automatically assembled as a whole PDF file at the end of the online procedure.
- The presubmission and full submission must be written <u>entirely</u> in English.

Principal Investigator

The Principal Investigator is the coordinator, i.e. the researcher who is primarily responsible for the proposed program. Please fill in the requested fields, inserting:

• the PI's title (Doctor, Professor, Engineer, Mr., Mrs., Miss) and qualification (i.e. current position)

• the title of the proposal. The title must not exceed 110 characters, small cases, spaces included. It should be neither too specific (with abbreviations of name of molecules such as "Role of PGCI in tumor progression"), nor too vague (such as "Analysis of tumor metastatization").

PI Contact Data

Please provide the PI's Institution, Department, Address, Phone, FAX and e-mail. This information should correspond to the place where the Principal Investigator has his/her full time position and where his/her work will be performed.

PI Administrative Data

Please provide the requested information about the PI's Institution legal representative (*legale rappresentante*) that can conduct negotiations on behalf of the PI.

Project Keywords

Carefully choose a maximum of five keywords from the list provided. <u>The selected keywords will</u> <u>help the Study Section in choosing the most appropriate reviewers</u>. Therefore, a good choice of keywords is extremely important to ensure that reviewers with the most adequate expertise will review the grant application. In the Presubmission form, keywords are listed in alphabetical order. To view the entire list, leave the query field empty and click on the Search button. Alternatively, type in a specific keyword and click on «Search». After selecting the keyword, scroll down to the end of the list and click on «Confirm». The alphabetical list of keywords is also available at the end of this Call for Proposals. In addition, we have divided the keywords very broadly into fourteen topics (listed at the end of this Call for Proposals), which should facilitate the search of keywords by subject as an alternative to going through the entire alphabetical list.

Abstract

Please do not exceed the one-page limit (approx. 500 words). The Abstract must be attached as a PDF file. Please place extreme care on the Abstract preparation. The Abstract must provide an immediate understanding as to why the program is proposed, what will be done immediately after the first findings, and the potential relevance of the whole line of research.

Note that the Abstract page of all funded programs may be posted on the Internet.

Presubmission research plan

Please do not exceed the five-page limit, including key references (approx. 2500 words). The Presubmission research plan must be attached as a PDF file.

In this section, the PI is expected to write a brief but comprehensive outline of the research plan, based on the items that are described in the Foreword of this Call (see above). The presubmission research plan must clearly describe the major objective shared by all participants, and how the work of each participating group is essential towards the achievement of this common goal.

Education and training of the PI

Click on "Add" and list (in reverse chronological order, starting from the most recent) degrees and post-doctoral trainings of the PI. This information must be provided for each Group leader as well, in the appropriate Group Leaders sections.

Research and Professional Experience of the PI

Click on "Add" and list (in reverse chronological order, starting from current one) all positions held by the PI. This information must be provided for each Group leader as well, in the appropriate Group Leaders sections.

Publications of the PI

A list of publications from the last five years must be provided for the PI (and, in the corresponding sections, for each Group Leader). Please fill in the requested fields with the PI's or the Group Leader's surname, first and middle name initials: the system will start a Pubmed search and provide a list of publications spanning from 2006 to 2011. Within the list, please check all the publications that belong to the PI (or Group Leader) and that the PI wants to include in the proposal. Be aware of homonymous researchers. Do not include abstracts, conference papers, book chapters and papers published in journals without IF, unless new journals. Then, using the online navigation tools, please mark those publications that are relevant to the proposal, those with acknowledgement to AIRC and identify **those in which the PI (or Group Leader) is: first author or co-first author (CFA), last author (L), first corresponding author (FCA) or corresponding author (CA); to avoid incomplete information, the system requires an obligatory answer as 'yes' or 'no'. If the PI is neither first, nor last or corresponding author, please click on "None of the above" in both authorship columns.**

The system will automatically process the publications data to provide the **list of publications** with the IF and a **track record summary** for the PI and each Group Leader, which can be visualized in the PDF draft and which will be included in the final PDF document of the application. The PI track record summary is intended as a quick assessment of the productivity in the last five years and of the international standing of the **PI and the Group Leaders**, in order to facilitate the work of reviewers.

Group Leaders

Each Group Leader (GL) is the researcher who is primarily responsible for the task(s) to be carried out by his/her unit.

For each Group Leader involved in the program, click on "Add" and insert the requested information (name, position, affiliation), then click on "Confirm".

In the home page of the Group Leaders section, click on each Group Leader's name to launch the list of forms that need to be completed for each GL, i.e.: the Administrative Data (with the name and contact data of each GL Institution's Legal Representative); the GL's Education and Training; the GL's Research and Professional Experience; the GL's Publications. All these sections must be completed following the instructions provided for the corresponding sections in the PI form (see above).

Presubmission PDF Draft and Online Submission

At any time during the application process a PDF draft file of the presubmission can be generated and checked by clicking on "Create PDF draft". It is strongly suggested that the PDF Draft and its content are carefully controlled and verified after all forms have been correctly filled out prior to completing the submission of the application.

All mandatory sections of the presubmission form, marked by an asterisk, must be completed and must have the "green flag" before finalizing the submission. After having ascertained that all data are correctly reported in the PDF Draft of the presubmission please finalize the application process by clicking on "submit".

The final PDF file of the presubmission <u>must</u> be saved for future reference; click on the "Print proposal's PDF" icon to download it and save it.

No paper documentation is required in the Presubmission phase.

Adenovirus	Cancer stem cells
Adhesion dynamics	Carcinogenesis
Adjuvant therapy	Caspases
Aging	Caveolin
AIDS/HIV/Kaposi	CD133/Stem cell markers
ALL	Cell adhesion and/or cell adhesion molecules
AML	Cell cycle
Androgen and/or receptors	Cell cycle checkpoint G1/S
Aneuploidy	Cell cycle checkpoint G2/M
Angiogenesis and/or vasculogenesis	Cell differentiation and/or differentiation therapy
Animal models	Cell migration, motility and/or invasion
Anti-angiogenic therapy	Cell polarity
Antibody/mAb therapy	Cell signaling
Apoptosis	Centrosome
Aromatase and/or inhibitors	Cervix ca.
ATM pathway	Chemistry
ATR pathway	Chemokines
Autoimmunity/Autoantibodies	Chemotherapy and/or chemotherapic drugs
Autophagy	Chromatin remodeling
B cells	Circulating tumor cells
bcl2 family	Clinical practice guidelines
BCR-Abl/Abl	Clinical trials
Beta-catenin/Wnt pathway	CLL
Biochemistry	CML
Bioinformatics	Colorectal and/or Intestinal ca.
Biomarkers	Combination therapy
Biomolecular modelling	Comparative genomics hybridization (CGH)
Biophysics	Computational biology
Bladder tumor	Computer Tomography (CT Scan)
Body mass index (BMI) and/or obesity	Costimulatory molecules
Bone morphogenetic protein (BMP)	COX2
BRAF/RAF kinases	Crosstalk
Brain and/or nervous system tumors	Crystallography
BRCA	CTL
Breast ca.	Cyclic AMP
Burkitt lymphoma	Cyclins and/or inhibitors
C.elegans	Cytogenetics and/or chromosome alterations
Cachexia	Cytokines/Interleukins
Cadherins	Cytoskeleton

Dendritic cells Diagnosis Diet DNA damage DNA double strand break repair (DSBR) DNA methylation DNA recombination DNA repair DNA single strand break repair (SSBR) Docking Drosophila Drug delivery Drug discovery and/or development Drug response and/or resistance Drug screening Drug toxicity EGF and/or receptors Embryonic development Endocrinology Endocytosis Endoplasmic reticulum (ER) Endothelial cells Epidemiology Epigenetics Epithelial mesenchyme transition (EMT) Epstein-Barr Virus (EBV) Estrogens and/or receptors Extracellular Matrix (ECM)/Stroma Fas and/or FasL FGF and/or receptor Flow cytometry Fluorescence in situ hybridization (FISH) Fluorescence resonance energy transfer (FRET) Focal Adhesion/FAK Folate and/or receptor Functional genomics Functional validation of target genes Fusion genes Gastric ca.

Gene alteration/gain or loss Gene expression and/or profile Gene regulation Gene therapy Genetics Genome wide screening/GWAS Genomic imprinting Genomic/Genetic instability Genomics Genotoxicity Glioma and/or glioblastoma Glucocorticoids and/or receptors Glucose metabolism and/or Warburg effect Glycoproteins and/or glycosylation Golgi G-protein and/or GPCR Granulocytes Growth factors and/or receptors Growth induction and/or growth arrest **GVHD** Gynecological tumors Head and neck ca. Heat shock proteins (HSP) Hedgehog pathway Hematologic malignancies Hematopoiesis Hematopoietic stem cells Hepatitis B virus (HBV) Hepatitis C virus (HCV) Hepatocellular carcinoma (HCC) HER1-2-3-4 Hereditary DNA repair disorders Hereditary tumors Herpes virus High Mobility Group Proteins (HMG) Histone modifications HLA/Major Histocompatibility Complex (MHC) Hodgkin's lymphoma Homologous recombination

Hormones

Human Papilloma virus (HPV) Hypoxia/Hypoxia-inducibile Factors (HIF-1) MET/HGF Immune escape Immunization Immuno-editing Metastasis Immunohistochemistry Immunosuppression and/or suppressor cells microRNA Immunotherapy In vitro imaging and/or live cell imaging In vivo imaging Infection Inflammation and/or inflammatory cytokines Mitosis Inhibitor of apoptosis proteins (IAPs) Innate immunity Insulin Insulin-like growth factor (IGF) and/or receptors Integrins and/or Integrin-linked kinase (ILK) Interferons Ion channels Myc Jak/Stat pathway Myeloma Kidney ca. Kinase/Kinome Lentivirus Leukaemia Liver development and/or regeneration Loss of heterozygosity (LOH) Lung ca. Lymphatics and/or lymphangiogenesis Lymphocyte differentation Lymphomas Macrophages and/or monocytes Magnetic resonance imaging (MRI) MAP Kinases Mass spectrometry Mathematical modeling Matrix metalloproteases (MMP) and/or inhibitors Oncogenes MDM2 Medulloblastoma Organic compounds

Melanoma Membrane biology Mesothelium Metabolism/Metabolomics Microarrays Microenvironment Microscopy Minimal Residual Disease (MRD) Mitochondria Monoclonal antibodies (mAbs) and/or immunoconjugates Mouse models mRNA processing mRNA translation Multidrug resistance (MDR) Mutation (somatic and/or germline) Nanotechnology/Nanoparticles Netrin receptors Neuroblastoma Next generation sequencing NF-kB family Nitric oxide NK and/or NKT cells NMR spectroscopy Non apoptotic cell death Non melanoma skin tumors Normal stem cells Notch pathway Nuclear medicine Nuclear receptor Nuclear structures Oncogenic virus/Viral oncology

Osteopontin	Retinoic acid and/or receptors
Osteosarcoma	Retrospective studies
Ovarian ca.	Rho GTPases family
Oxydative stress and/or Reactive Oxygen Species (ROS)	Risk factors
p21 - activated kinases (PAK)	RNA binding proteins
p53, p63, p73	RNA splicing
Palliative care	Sarcoma
Pancreas ca.	Screening
PDGF and/or receptors	Senescence
Pediatric tumors	Signal transduction inhibitors
Peptides as drugs	siRNA and/or non coding RNA
PET and/or PET-CT	Small molecule inhibitors
Phage display	Smoking
Pharmacogenetics/Pharmacogenomics	Soft tissue tumors
Pharmacokinetics	Solid tumors
Pharmacology	SPECT
Phosphatases	Spheroids/3D cultures
Phospholipids	Src family
Phosphorylation	Staging
PI3K/Akt/PTEN/mTOR pathway	Statistics
Poly-ADP-ribose polymerase (PARP)	Stress response
Polymorphisms/SNPs	SUMO and/or sumoylation
Post-translational modification	Surgery
Precancerous lesions	Survival analysis
Preclinical studies	Synthetic lethality
Prevention and/or chemoprevention	Systems biology
Prognosis	T cells/TCR
Prostaglandins	T helpers
Prostate ca.	Target therapy
Proteasome	Telomere and/or telomerase
Proteomics	Testis ca.
Radionuclide therapy	TGF and/or receptors
Radiosensitivity and/or resistance	Thyroid ca.
Radiotherapy	Thyroid hormone
Radiotoxicity	Tissue microarrays (TMA)
RAS/RAS inhibitors	TNF and/or receptors
Rb/Rb family	Tolerance
Response and/or resistance to therapy	Toll-like receptors (TLR)
RET	Topoisomerase

TRAIL	Tumor-stroma interaction
Transcription	Tyrosine kinase receptors (TKR) and/or inhibitors
Transcription factors	Ubiquitin and/or ubiquitination
Transformation assays	Urokinase-Plasminogen System (uPA, uPAR, PAI)
Transgenic mice	Vaccine
Translesion synthesis	VEGF and/or receptor
Translocation	Virology
Transplantation	Von Hippel-Lindau (VHL)
Treg cells	Wilms' Tumor Gene WT1
Triple negative breast ca.	Xenopus
Tumor antigen	Yeast
Tumor dormancy	Zebrafish
Tumor suppressor genes	