

AIRC - Fondazione Cariplo

TRIDEO 2015

TRansforming IDEAs in Oncological research award

Call for proposals open to researchers working anywhere in Italy with the exclusion of Lombardy and the provinces of Novara and Verbania

1965-2015



**Da 50 anni con coraggio,
contro il cancro.**



**fondazione
cariplo**

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Fondazione Cariplo entrusts AIRC with the management of this Call. Please submit any enquiry to AIRC.

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Foreword

The Associazione Italiana per la Ricerca sul Cancro (AIRC) and Fondazione Cariplo (FC) are inviting applications for the “TRansforming IDEAs in Oncological research award” (TRIDEO). The aim of TRIDEO is to encourage creative, out-of-the-box thinkers to pursue exceptionally innovative ideas in cancer research that may be too novel, and possibly not supported by preliminary data, to successfully compete in a traditional peer review process. Urgency for cancer research, exceptional innovation and originality, and a solid scientific approach are three features that should stand out in any TRIDEO’s successful application. The further concept behind this call is that a grantee, who will prove his/her idea with data obtained thanks to a TRIDEO funding, will then apply to a more conventional grant to further develop his/her project. To this aim, the grantee must be the last and corresponding author of all publications originating from the research carried out with the TRIDEO. Failure to respect this commitment may result in withdrawal of the grant.

The grant will provide support for a period of one or two years (provided that AIRC and FC have available funds), starting from January 2nd 2016.

Given the extensive and long lasting experience of AIRC in cancer research funding schemes, FC is entrusting AIRC with the entire management of this Call and of the projects that will be funded within this scheme. Therefore, any enquiry from applicants and subsequently by grant holders has to be submitted to AIRC.

How to apply

A presubmission inquiry is mandatory for TRIDEO grants. The presubmission should contain a **two-page Letter of Intent** with the description of the proposed work and of the projected achievements, together with a description of the qualifications of the applicant, henceforth defined Principal Investigator (PI). A cogent case, to explain why the applicant and the proposed research project are suitable for this type of grant, will have to be made. A complete list of publications of the last five years must accompany the presubmission inquiry. Applicants who meet the eligibility requirements and who present the most competitive presubmissions will be invited to submit a full proposal.

Eligibility criteria

Applicants. Applicants can be of any nationality, are expected to have operated to the highest standards of integrity during their whole career and **must be 40 years old or younger by the time of the presubmission application’s deadline** (born on or after March 2nd 1974); exceptions to this age limit are allowed only in case of research interruptions (see the “Research interruptions and Justifications” section of this Call for details). In addition, by the presubmission deadline, applicants **must have at least one first or corresponding author primary research paper in press or published in the last five years** in high level peer-reviewed journals; papers in press must be accepted for publication, not just submitted, by the application deadline. Reviews, editorials, or letters to the editor without data do not count for eligibility.

AIRC and Fondazione Cariplo reserve the right to reject proposals from PIs who, even if jointly affiliated to an Italian and a foreign institution, do not meet criteria for continuous presence in Italy for at least 50% of their time. To make sure this requirement is met, supporting official documentation will be requested from all institutions the PI is affiliated with (see “Declaration on affiliation” section).

The Principal Investigators cannot have more than one active AIRC grant at the same time in the following categories: Investigator Grant (IG), Start-Up Grant, My First AIRC Grant (MFAG) or TRIDEO. Nevertheless, they can apply to this Call if their active AIRC grant is in its final year.

Only one application, either IG, or MFAG or Start-Up or TRIDEO per applicant can be submitted within the 2015 AIRC Calls.

Applicants who are currently holding another Fondazione Cariplo grant can apply to this Call and the same investigator can apply to other Fondazione Cariplo 2015 Calls (only as partner).

Hosting Institutions. For the entire duration of the grant applicants must operate in the Hosting Institution, i.e. a non-profit research organization (such as university, hospital or other research center) located anywhere in Italy with the exclusion of Lombardy and the provinces of Novara and Verbania. The research organization can be organised under public or private law, and, irrespective of its legal status, its primary goal is to independently conduct non-economic biomedical research and to disseminate its results. Possible revenues coming from non-economic research activity must be completely reinvested in the non-economic research activities. Where the Hosting Institution also pursues economic activities, the financing, the costs and the revenues of those economic activities must be accounted for separately. Shareholders, members or other individuals that can exert a decisive influence upon the Hosting Institution cannot enjoy a preferential access to the intellectual property of the results generated by the non-economic research activity.

There are no restrictions on the type of position held by the PI at the Hosting Institution (research contract, fellowship, etc.). Any change occurring in the relationship between the applicant and the Hosting Institution (*e.g.* termination, leave of absence, sabbatical etc.) or in the Hosting Institution legal entity or organization (*e.g.* changes in Institution name, merging, Legal representative turnover, changes in addresses) must be promptly notified to AIRC.

Hosting Institutions must provide proper working spaces, laboratories, equipment, qualified personnel and resources to allow the project execution.

AIRC and FC reserve the right to reject proposals that do not meet these criteria.

The research plan

Given the extremely innovative nature of this award, AIRC and FC believe that any rigid guideline on the research plan would limit the creativity of researchers and, as a consequence, exclude potential breakthroughs in cancer research. Therefore, any proposal that has an extreme level of novelty and urgency for cancer research is welcome (see “The review process” section for more details).

Please note that the research plan must include a careful description of the scientific approach with provisions for study design, statistical analysis and sample size (whenever applicable). If such information is missing or insufficient, the research proposal will be rejected.

For studies involving human subjects, human biological samples or for animal experimentation, the approval of the competent authorities is mandatory; research proposals will not be funded in the absence of such documentation. See the “Bio-ethical requirements” section of the Guide to proposal preparation for further details on the documentation required. AIRC and FC do not accept any liability for harm to participants in AIRC and FC funded trials.

Translational and preclinical proposals within clinical studies that are property of companies producing drugs or diagnostic tools and that receive economic support from such companies will not be accepted. Drug supply and economic support from companies do not preclude AIRC and FC evaluation, provided that the PIs have the full property of data and results, and that companies have no right to veto the publication of results at any time. A statement that the

management of the study, data acquisition and analysis and data property are completely independent of any company producing/marketing drugs or diagnostic tools or with any type of economic interest in the study must be included in the application (see the “Personnel involved in the research” section of the application form), together with the indication on whether the company provides its product(s) to the PI for free or not. Failure to provide such information will result in the rejection of the proposal.

Intellectual property

For inventions arising from funded projects, grant money can be used to cover the costs for filing a patent application within the European Union (EU), but not to extend a patent to non-EU countries. Intellectual property and patents resulting from research carried out with grants funded within this scheme will be solely owned and managed by the grantee and the Hosting Institution. **In the event that the grantee finds an innovation, AIRC and FC must be promptly informed about the contents of that innovation and the possible implications of industrial development.**

Funding

Awards are for one or two-year period. In case of two-year projects, the 2nd year of funding will be provided upon the presentation of a renewal request. Funded projects will officially start on January 2nd 2016 and terminate either on January 1st 2017 (for one-year projects) or on January 1st 2018 (for two-year projects).

The award is meant to cover the research costs and/or the salary for maximum two fellows or one fellow and the PI. Applicants must indicate the requested support in the budget section of the application, providing a detailed financial breakdown of the anticipated expenditures. **The total budget requested cannot exceed €100.000,00.**

The following costs are permitted:

- **direct research costs**, inclusive of consumables and supplies, small bench instrumentation, services, maintenance contracts, publication costs, meetings/travel costs. Such costs should correlate with the number of components of the research unit;
- **support for fellows (personnel costs)**. Support will be provided only for fellows (one or two) at 100% of time on the project. Applicants should ascertain that the Hosting Institution can take on fellows;
- **salary for the PI** (partial). This award can cover maximum half of the salary of the PI and can be requested only if strictly necessary (*i.e.* only in case the Hosting Institution cannot afford to pay the full amount of his/her stipend). In this case, the salary support will be negotiated with and given to the PI by the Hosting Institution, which will have all the administrative responsibility;
- **indirect costs**. These are generated by the research project, but cannot be attributed directly and quantitatively to a specific activity. For example, they may include core facilities, personnel of the research team not directly involved in research activities (*e.g.* secretaries and core-facilities personnel, etc.). Indirect costs are up to 15% of the direct research costs (personnel included) incurred, not of the total amount that will be granted;
- **overheads**. These are expenses that the Hosting Institution must cover so that the research can be carried out. They may include, for example, grant management costs, utilities, administrative costs etc. Overheads are up to 10% of the sum of direct (personnel included) and indirect costs incurred, not of the total amount that will be granted.

Once awarded, the grant is assigned to the PI to carry out the project described in the application. Funds will be made available exclusively to the Hosting Institution under terms and conditions that

AIRC and FC will provide once the application is approved. Funds must be at the awardee's disposal within 30 days from the time the Hosting Institution has access to them.

Transfer of grant money to collaborators working in other laboratories either in Italy or abroad is not allowed.

For two-year projects, the renewal requests must be submitted in 2016 (see "Deadlines" section) through the appropriate online forms. The requests will be approved provided that AIRC and FC have available funds and that the PI and the Hosting Institution have complied with the terms and conditions of the award.

After the termination of the grant, a scientific final report must be submitted (see "Deadlines" section) and will strongly impact on the evaluation of future AIRC and FC grant applications.

An administrative final report must be submitted within three months after the termination of the grant (see "Deadline section"); please note that AIRC and FC will audit the administrative management of some funded projects starting from six months after the termination of the grant.

The Review Process

Applications that meet all 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 and FC appointing a Study Section composed of outstanding non-Italian 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, including the evaluation of the presubmissions. The Study Section will entrust the staff of the AIRC Peer Review Office with the administrative review to verify the compliance of the applications with guidelines and eligibility criteria; those that do not conform will be triaged out. The Study Section might also recruit additional international reviewers with the needed expertise, from a panel of more than 600 well established international investigators working in institutions outside of Italy. 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. When accepting to evaluate an application, reviewers agree that they will maintain the confidentiality of the application and associated materials they have received. Applicants may request to exclude up to two scientists as reviewers through the online application form.

The three main review criteria are:

- a) significance and impact on cancer;
- b) originality, innovation;
- c) scientific approach.

Reviewers will also take into consideration:

- d) feasibility of the project: track record of the PI, environment and collaborators;
- e) pitfalls and caveats;
- f) adequacy of the budget requested.

All applicants will be notified of the final decision on their application with an official communication from AIRC and FC (see the "Deadlines" section for the notification date), and they

will have access to the reviewers' comments. A shortlist of applicants might be interviewed before the official awarding of the TRIDEO grant. **The decision concerning the funding of an application cannot be appealed.**

Please note that after the awarding of a grant AIRC and FC reserve the right to site-visit the PIs laboratories and Hosting Institutions, at any time.

Deadlines

DEADLINES ARE STRICTLY ENFORCED: applications submitted after the deadline will not be accepted.

Deadlines for applications (by 23:59, Central European Time, of the indicated dates).

Presubmission enquiry (mandatory)	online form release	February 3, 2015
	electronic submission deadline	March 2, 2015
	notification of results	May 17, 2015
Proposals (only if presubmission approved)	electronic submission deadline	June 15, 2015
	paper submission (postmark) deadline (*)	June 17, 2015
	notification of results	November 30, 2015
	start of grants	January 2, 2015

(*) Only the following pages are required in paper format and must be mailed by the indicated deadline:

- Title page, stamped and signed by the PI and the Legal representative;
- Abstract;
- Budget form, stamped and signed by the PI and the Legal representative;
- Bio-Ethical requirements page, stamped and signed by the PI;
- only if research in humans is planned: Clearance from the Ethics Committee;
- Declaration on affiliation, stamped and signed by the PI and the Legal representative.

Send all paper documentation to the following address:

**AIRC
Direzione Scientifica
via San Vito 7
20123 Milano**

***** Paper documentation marked with “draft” is not valid. Please print the requested pages only after completion of the online submission *****

If these documents are not sent by the indicated deadline, or if AIRC does not receive them, applications will not be sent out for review.

Deadlines for renewals and final reports (by 23:59, Central European Time, of the indicated dates).

ONE-YEAR PROJECTS

Scientific final report	online form release	January 10, 2017
	electronic submission deadline	March 30, 2017
Administrative final report	online form release	January 10, 2017
	electronic submission deadline	March 30, 2017
	paper submission (postmark) deadline	April 3, 2017

TWO-YEAR PROJECTS

Renewal for 2rd year of funding	online form release	April 15, 2016
	electronic submission deadline	June 4, 2016
Scientific final report	online form release	January 10, 2018
	electronic submission deadline	March 29, 2018
Administrative final report	online form release	January 10, 2018
	electronic submission deadline	March 29, 2018
	paper submission (postmark) deadline	April 2, 2018

The deadlines for renewal requests and final reports may be subjected to changes. In this case, PIs will be notified of the new deadlines by e-mail.

Guide to presubmission preparation

To apply, click on the “Area Ricercatori” of the site www.airc.it

- For researchers that already have an AIRC account: access the “Personal Area” with your username and password.
- First-time applicants must register in our system: please click on “Register (for applicants only)” and provide the requested information, including your tax code (*codice fiscale*). The registration will be confirmed by e-mail and a username and password will be provided.

To launch the application form for the first time, click on “Calls”, select “Individual Grants”, then click on “Apply” in the TRIDEO 2015 section. In the next window, click on “Access the application form”. To access the application in progress, click on “Submissions” and then click on “Access the application form”.

Below you will find a list of the general features of our online system:

- the system automatically launches the “Principal Investigator” form. All forms that must be filled out are listed on the left side of the page. Click on each one of them and fill in all the mandatory fields (in bold). Make sure to click on “SAVE” after completing each form;
- the forms can be filled out in different sessions and the work can be interrupted/resumed at any time;
- a number of forms must be submitted as PDF files. **Each file cannot exceed 2Mb**. Any file exceeding such a limit will be automatically rejected by the system. **Secure PDF files cannot be uploaded**. Documents submitted as PDF files 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 system will not allow the upload of a number of pages beyond the limit;
- the status of each form is shown on the left: red cross for mandatory forms that are incomplete; yellow circle for not mandatory forms; green mark for completed forms. These same symbols are used in the “Check and submit” section;
- the “Check and submit” section (last title in the list of forms on the left) allows applicants to:
 - a. check and see whether each form has been correctly filled out; for mandatory forms that are incomplete, the information that must be provided is listed;
 - b. view and print the application in its incomplete/complete state. By clicking on “Create draft” and then on “Open submission draft” you can download the PDF draft generated by the system;
 - c. submit the application. Once all mandatory forms are complete, please click on “Submit”. Be aware that after clicking on “Submit” it will not be possible to make any further modifications;
- the complete proposal is automatically assembled as a single PDF file at the end of the online procedure;

- applicants may designate a **Grant Officer** from the Hosting Institution to assist in the preparation and submission of the application. However, the PI is fully responsible of the entire proposal content. See the “Research project” section for further details.

The application must be written entirely in English. **Applications that do not conform to all the requirements in these instructions will be rejected.**

Principal Investigator (PI)

The PI is the researcher who is primarily responsible for designing and directing the proposed research.

Please provide the PI’s position in the Hosting Institution (examples: associate professor, staff scientist, etc.). All other fields are automatically filled out with information provided during the registration into the AIRC website; to modify the information in any of these fields, please click on the link “My personal data” at the bottom of the page and edit the information in the pop-up window. **Please note: to successfully complete this form, it is mandatory to provide the tax code (*codice fiscale*) of the PI through the “My personal area” section.**

Research project

Please fill in the requested fields, entering:

- the duration of the grant (one or two years);
- the title of the proposal. The title must not exceed 120 characters, small cases, spaces included. It should be neither too specific (with abbreviations of molecules names such as “Role of PGC1 in tumor progression”), nor too vague (such as “Analysis of tumor metastatization”);
- the Hosting Institution (*i.e.* the Italian research center where the PI will carry out the research activity). The system automatically lists the Institution(s) indicated by the PI in previous applications to AIRC and located anywhere in Italy with the exclusion of Lombardy and the provinces of Novara and Verbania, if any. In case it corresponds to the Institution where the research supported with this grant will be carried out, please check the corresponding box, otherwise check the box “Other” and select the correct Hosting Institution from the drop-down menu. The “Address” field is automatically filled in by the system once the Hosting Institution and Department have been selected. If the Hosting Institution is not listed in the menu, please contact our offices (administrative.office@airc.it);
- the Department: please select one of the Departments listed in the drop-down menu, unless the form indicates “not available”;
- the Laboratory (optional): please indicate the Laboratory, if applicable;
- Grant Officer (optional): applicants may designate a Grant Officer from the Hosting Institution to assist in the preparation and submission of the application. The name of the Grant Officer, if not already present in the form and selectable from the drop-down menu, must be communicated to AIRC by sending an e-mail to: airc.direzione-scientifica@airc.it. AIRC will create an account for the Grant Officer and send him/her the access codes to it. The name of the Grant Officer will then appear in the drop-down menu of the application form, allowing the PI to select the name. From their Personal Area the authorized Grant Officers will have access to the PI’s application form and will have the possibility of completing and submitting it on behalf of the PI.

Legal representative

The Legal representative (*Legale rappresentante*) of the Hosting Institution will be responsible, along with the PI, of all the legal and administrative duties of the grant. The information regarding the Legal representative and the Scientific Director are provided automatically by the system based on the Hosting Institution selected in the “Research Project” section. Please make sure that all data are correct and up-to-date, and then click on “Save”. If they aren’t, please notify AIRC by e-mail

(administrative.office@airc.it) and provide an official record (e.g. copy of Appointment Decree) as supporting documentation.

Project Keywords

Project keywords will be used by the AIRC Peer Review Office to assign each application to the most appropriate reviewers. Therefore, **a good choice of keywords is extremely important to ensure that reviewers with the most adequate expertise will evaluate the application.** Avoid keywords that are too generic or too similar with each other; pick a set of keywords that clearly define the key aspects of your research plan.

Keywords are listed at the end of this Call both in alphabetical order and by topic.

To enter the project keywords (at least one, maximum five) please click on the button “Enter/Edit Keywords”. In the “Manage Project Keywords” pop-up window, keywords are grouped by their first letter: for example, by clicking on the letter “C” in the menu it is possible to visualize all keywords beginning with the letter C, and to select one. Alternatively, type in a specific keyword in the “Search a specific keyword” box and click on “Search”. To select a keyword, click on it (the keyword box will turn from grey to blue) and then click on “Save”. You will be automatically redirected in the main keywords page: click on “Save” at the bottom of this page to save the record. Repeat this process for each keyword. To exit the window, click on “Close”.

Letter of Intent

In this section, please upload a PDF file with the Letter of Intent (maximum two pages; do not include publications, as these will be listed in a separate section of the application form). In the Letter of Intent, applicants are invited to describe the proposed work and the projected achievements and to give a description of their qualifications. A cogent case, to explain why the applicant and the proposed research project are suitable for this type of grant, will have to be made.

PI Education and Training

Click on “Add new record” and list degrees of the PI. For each entry, please indicate the University/Research center, Country, City, Field of research and time frame, then click on “Save”.

PI Research and Professional Experience

Click on “Add new record” and list all positions held by the PI including post-doctoral trainings. For each entry, please indicate the Institution, City, Country, time frame and the position held, then click on “Save”.

Research Interruptions and Justifications

This section should be completed in case the applicant’s research activity has been interrupted for at least 5 months between 2010 and 2015 due to parental leave, children care, illness or other personal issues. This section allows applicants to report prolonged periods of absence from work that may have had a negative impact on their track record. Reviewers are instructed to take this information into account when assessing the scientific productivity of an applicant.

Publications

The PI must provide the list of papers published in the last five years. To do so, a number of options is available; click on any that applies.

Add PubMed publications

Within this interface the system launches a PubMed search and provides a list of PubMed-recorded publications spanning from 2010 to 2015. Enter the PI's first and middle initials, and click on "Find". If the applicant has published with a different last name than that used to register into the AIRC account (*e.g.* married *vs* maiden name), check the "Change surname" box, and then click on "Find". Alternatively, search for a specific article by entering its PubMed ID in the corresponding box. Once the list of all PubMed publications has been generated, please follow these steps:

a. Select papers to be included in the application

From the list of all PubMed publications, select the papers published by the applicant and that the applicant wants to include in the proposal by clicking on the box at the left side of each article. Pay special attention to potential homonyms. Do not include abstracts, conference papers, book chapters and papers published in journals without IF, unless they are new journals.

b. Indicate acknowledgement to AIRC and FC

For each publication, please indicate whether it has an acknowledgement to AIRC and/or FC by checking either "YES" or "NO" (the default is "NO").

c. Certify accuracy of flags, and save records

Once all selected publications have been flagged, scroll down to the bottom of the page and check the certification box ("I, the undersigned, certify that all publications have been carefully checked and correctly flagged for authorship. I am aware that any mistake or inaccuracy may impact the evaluation of my track record"). The system automatically recognizes the position of the applicant in the list of authors in each publication (if not, the box "not assignable" will be checked). It is possible to amend this information, if incorrect, by providing supporting documentation from the main page of the Publications (see below). Click on "Add selected publications" and then on "Close" to complete the process.

Add Web of Science® publications

From this section it is possible to enter articles that are included in Web of Science® but not in PubMed (most journals are present in both databases, but there are few exceptions; the drop-down menu does not list PubMed journals). For each record, please provide the title, list of authors, journal, year and month of publication, volume, pages. Select the journal from the drop-down menu, which provides all journals listed in Web of Science®. Mark each paper for authorship and acknowledgement to AIRC and/or FC. Please upload the page of the article where the role of the author in the published work is certified (not the entire manuscript). Finally, check the certification box and click on "Save" to complete the process.

Add papers in press

Use this section to submit articles already accepted for publication but not yet available online. For each record, please provide the title, list of authors, journal, year. Select the journal from the drop-down menu, which lists all Web of Science® indexed journals. Mark each paper for authorship and acknowledgement to AIRC and/or FC. Please upload a PDF file with the letter of acceptance from the journal. **Do not attach the entire manuscript**, unless it is relevant for the proposed research (*e.g.* it contains important preliminary data mentioned in the proposal main body). Finally, check the certification box and click on "Save" to complete the process. The IF of papers in press will not be included in the publications table.

Add from MyPub

This interface lists all publications previously entered into the AIRC system (either when submitting an application, or when submitting a grant renewal request, or directly into the MyPub section of the

Personal Area). By selecting some or all of these publications, they will be uploaded in the current application; please make sure the flags are correct.

All publications entered from any of the above sections will be listed in the “Publications” main page. From here, it is possible to edit the information relative to each paper by clicking on the title of the publication. Once in the “Edit publication flags” window, please check the appropriate authorship box and, if different from the default provided by the system, upload the page of the article where the role of the author in the published work is certified (*e.g.* for a second or third author who is in fact a co-first author, please upload the PDF file of the page where it is stated that the PI “equally contributed to this work”). To complete the process, click on the certification box and click on “Save” to complete the process.

The system will automatically process all publications data to generate the complete **list of publications** reporting the IF and the PI’s **track record summary** in the PDF file 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, in order to facilitate the work of reviewers. Please note: papers in press are not included in the track record summary. Active IF is calculated as the sum of IFs of all articles where the applicant is first, last or corresponding author in the last five years.

The PI is responsible for uploading the most accurate information regarding publications and authorship. The IF assigned to each article, regardless of the publication date, is the latest provided by Thomson Reuters. For this Call, the 2013 Thomson Reuters IF list will be used.

Candidates are required to check all the information and to contact the AIRC Peer Review Office before the deadline of the Call in order to correct any possible inaccuracy or mistake.

Even though the Impact Factor is internationally acknowledged as an important objective criterion that allows for an estimate of peer-recognition of the work of a given investigator, AIRC and FC are aware that it is not an absolute standard to evaluate scientific productivity. Moreover, several circumstances mitigate the relevance of the IF; for example, some important, recently established journals may not be impacted yet or have “artificially low” IF due to their young age. Also, for some research areas with very specialized, limited readership (*e.g.* medicinal chemistry) the best journals have low IF compared to others in more popular research arenas. **Reviewers are carefully instructed by AIRC and FC to give due consideration to all caveats associated with the IF when assessing an applicant’s track record and scientific productivity.**

Presubmission PDF Draft and Online Submission

At any time during the application process a PDF draft file of the presubmission enquiry can be generated and checked: go to “Check and submit” (on the lower left of the main page), click on “Create draft” and then on “Open submission draft”. It is strongly suggested that after all forms have been correctly filled out, and prior to proceeding with the final submission, the PDF Draft and its content are carefully read, controlled and verified.

To submit the application, go to “Check and submit”. All mandatory sections of the application form must be completed and must have the green “OK” label before finalizing the submission. Only after having ascertained that all data are correctly reported in the PDF Draft of the presubmission, please click on “submit”.

Applicants will receive a confirmation of the submission by e-mail. The final PDF file of the presubmission enquiry will be available in the “Your submissions archive” section of the Personal Area, and a copy should be saved for future reference.

Guide to Full Proposal preparation

This section is only for applicants officially notified that their presubmission enquiry has been successful.

Click on the “Area Ricercatori” of the site www.airc.it. Log on in the “Personal Area” with your username and password.

To launch the full application form click on “Submissions” and then click on “Access the application form”.

The full submission application comprises:

- the presubmission enquiry forms. All the information entered in these forms during the presubmission phase cannot be changed, with the exception of the Publications form, which can be modified in order to submit updated information with the full proposal;
- a set of new forms. Below is a detailed description of the information required in the new forms.

Please note that the same general instructions described in the Guide to presubmission preparation apply for the full proposal preparation, *e.g.* do not attach PDF files bigger than 2 Mb, etc.

Declaration on affiliation

In this section applicants must indicate whether they are already working in the Hosting Institution. It is not mandatory to be located in the Hosting Institution at the submission deadline; however, should the application be funded, PIs are expected to be affiliated with the Hosting Institution from the beginning of the project and for the entire duration of the grant. Applicants are also required to list all institutions (in Italy or abroad) they are affiliated with.

Affiliation with the Hosting Institution. If the response to the statement “I am affiliated with the Hosting Institution at the application submission deadline” is “No”, applicants must provide an official document certifying that for the entire duration of the grant they will be affiliated with the Hosting Institution, where they will work on the project for at least 50% of their time. Please send the document **by November 15th 2015** (or before the project starts) to: administrative.office@airc.it

Affiliation with other institutions. If the response to the statement “The Hosting Institution is the only institution I am affiliated with” is “No”, please list any additional institution the PI is involved with (in Italy or abroad), either selecting it from the drop-down menu or indicating it in the text box below. Click on “Add” to list multiple institutions. Applicants must provide official documentation certifying that for the entire duration of the grant they will be: a. working in Italy for at least 50% of their time; b. affiliated with the Hosting Institution; c. working in the Hosting Institution on the research project for at least 20% of their time. In addition, they are expected to provide official documentation of their relationships with all other institutions indicated in the form. If already available at the time of submission, check the box “I am attaching official documentation...”, click on “Select” and upload the documents as a single PDF file. If not available at the time of submission, check the corresponding box and send the documentation **by November 15th 2015** (or before the project starts) to: administrative.office@airc.it

Abstract

Extreme care must be placed on the Abstract preparation. The Abstract must provide an immediate understanding as to why the research plan is proposed, which approach will be undertaken and the

potential relevance of the whole line of research. Avoid long introductions and do not include references.

The Abstract should be structured into the following sections: Background, Hypothesis, Aims, Experimental Design, Expected Results and Impact on cancer. Either type in the text directly into the box, or use a Word processor and then cut and paste the text into the box. Please note: the system allows plain text only; special characters will be maintained but formatted text (*e.g.* bold, superscripts, etc.) will be automatically converted into plain text. **The total number of words for the entire abstract must not exceed 500**; for convenience, the total word count is provided at the bottom of the page and is updated in real time. When all sections have been filled out, click on “Save”. All sections will be assembled automatically into one page in the PDF file of the application.

The Abstract of all research projects funded by the TRIDEO award may be used for AIRC and FC communications with the public.

Proposal Main Body

This section must not exceed 5 pages (approximately 2500 words) and must be attached as a PDF file. Describe in detail the proposed research, intended to have a duration of one or two years, according to the following scheme that reflects the review criteria:

- please provide the **background and rationale** of the proposed research and explain the **impact on cancer**; avoid lengthy, paper-like, introductions. Please include relevant literature references, the bibliography should be limited to only those citations essential to the application. List all references together at the end of the proposal main body, **employing the format used by the journal Cancer Research: for any reference, give the title and all authors**. Example: Hanahan D, Weinberg RA. Hallmarks of cancer: the next generation. Cell 2011; 144:646-74. When available, we strongly encourage to include a paper identification code (PubMedID or doi). Preliminary data are NOT required, but when available, they are welcome; if this is the case please insert figures and not just written descriptions;
- include an **innovation statement** and please make a cogent case of the reason why the proposed research is particularly original, novel, unheard of, and why its results are urgently needed in the arena of cancer research. The nature of the innovation can take a variety of forms. For example, proposals might challenge existing paradigms, test novel concepts or apply to cancer existing approaches and disciplines that have never been exploited in the field;
- please describe the **scientific approach** by including the experimental design and the methodologies that will be employed. If the methodology is new or unusual, describe it in sufficient details for evaluation. Description of cumbersome experimental details and protocols, however, is not encouraged and generally detracts from the quality of the proposal. Please include power calculation: make sure to have adequate sample sizes to ensure meaningful and statistically significant results;
- given the high risk involved in this kind of proposals, make sure to include a section on potential **pitfalls and caveats** to discuss the possible difficulties and limitations of the proposed procedures and to suggest alternative approaches to achieve the objectives;
- please describe the **feasibility of the project**, by providing:
 - a description of the PI's expertise, qualification, past experience and accomplishments that are directly relevant to the projected success of the proposal;
 - a description of facilities and equipment available for the research. This is particularly important, as many international reviewers may not be familiar with

Italian research institutions. To this aim, it would be useful to provide a link to the lab and/or Hosting Institution webpage, when available in English;

- a description of the key expertise available in the research team (it is possible to provide this information in the “Description of the work for every unit of personnel” section).

Personnel Involved in the Research

This form must be filled out for all persons directly involved in the project, including the PI. Do not list secretaries and/or administrative staff.

For every unit of personnel listed there should be a description of the work that she/he will perform in the “Description of the Work for each Unit of Personnel” section. Units of personnel devoting less than 20% of their time to the project should not be added in this section; they should be just listed in the “Description of the work for each unit of personnel”.

The “core research team” is the research unit directed by the PI, comprising the PI and internal staff (fellows, technicians, collaborators working in the Hosting Institution). The term “External collaborations” is used for scientists external to the core team and/or not affiliated with the Hosting Institution and collaborating with the PI, and for companies involved in the project. Even though scientific collaborations are not discouraged, TRIDEO awards are granted to a single PI, who has full responsibility for directing the proposed research; they are not meant to support multi-unit projects conducted by a team of independent investigators. Also, please note that the term “collaboration” means a scientific collaboration, not a kind of labor contract.

Please pay particular attention to the allocation of manpower: reviewers will determine whether it is reasonable for the amount and type of work proposed.

Begin by completing the information relative to the PI: click on the name of the PI and fill in the indicated fields:

Clinician: choose “yes” only if directly involved in clinical practice (*i.e.* examining and treating patients).

Core team members

To insert a new member of the research unit, click on “Add new core team member” and fill in the fields in the pop-up window. In addition to their personal data (name, surname, date of birth, gender, tax code and Hosting Institution), the following information are required:

Role: please choose one from the available entries: fellow; technician; internal collaborator (for any personnel working in the same laboratory, Department or Institution as the PI, and working/collaborating with the PI on the proposed research plan). Please note that **support will be provided for fellows only** (not for technicians or collaborators) working 100% of their time on the project.

To be defined (TBD): check this box if a fellow, technician or internal collaborator has not been identified yet, and enter the requested information. Add TBD personnel sparingly, since a high percentage might compromise the timely start of the work and/or negatively influence the assessment of the feasibility of the research plan. For each TBD personnel please upload one page containing a brief description of the qualifications/skills necessary for the project that the TBD should have.

Title: please choose one from the available entries: Doctor, Professor, Engineer, or leave blank if none applies.

Clinician: for each personnel choose “yes” only if directly involved in clinical practice (*i.e.* examining and treating patients). In general, fellowship support should not be awarded to clinical fellows, since it is quite rare that physicians taking care of patients may be involved on a specific research project at 100% of their time. Exceptions may be possible if thoroughly justified in the “Personnel costs justifications” section of the budget form.

Curriculum vitae: please upload a **one page CV in English** as a PDF file. CV must be added **only** for personnel working at least at 75% of their time on the project, with the exclusion of technical staff (please indicate the Man/Year effort in the Budget section).

The following format must be used for all CVs:

- personal data (name, date and place of birth, citizenship, work address, phone number and e-mail address);
- education (list, in reverse chronological order, all degrees obtained);
- research experience (list, in reverse chronological order, all positions held, describing very briefly – two sentences maximum – the main focus of the research activity);
- technical skills and competences;
- awards;
- publications (please provide only a selection of the most relevant, with a maximum of five).

External collaborations

To insert a collaborating scientist external to the core team and/or not affiliated with the Hosting Institution, or a company involved in the project, click on “Add new external collaboration” and fill in the fields in the pop-up window. In both cases a formal letter of collaboration is required and must be uploaded as PDF file. In the letter of collaboration, the role on project, the expertise and/or reagents that will be provided should be described in detail. Also in this document, the external collaborators should indicate whether specific agreements have already been made with the PI in terms of: a) management of the resources; b) intellectual property rights; c) authorship in publications resulting from the collaborative effort. Letters of collaboration provided by companies should also state that: a) the PI has the full property of data and results; b) the company has no right to veto the publication of results at any time; c) the management of the study, data acquisition and analysis and data property are completely independent of any company producing/marketing drugs or diagnostic tools or of any type of economic interest. The letter should also indicate under what provision (free or not) the company provides its product(s) to the PI.

Description of the Work for each Unit of Personnel

Click on “Select” and upload a PDF file; please do not exceed 2 pages (1000 words).

Please divide this document into Tasks, reflecting the organization of the proposal main body, and indicate who will do what in each Task. Describe in a concise, but complete manner, the work that each unit of personnel (both core team members and external collaborators) will perform. If necessary, provide evidence of the skills of key team members citing a couple of significant papers that attest to their expertise. Please indicate the position held by each person (*e.g.* investigator, post-doc, staff scientist, technician, etc.). Do not list undergraduate students, secretaries and/or administrative staff, but do include scientific personnel that might be involved for less than 20% of their time.

Budget Form and Justifications

In the two columns, one for each year of support, insert the amount needed for each of the categories allowed. **The total budget requested cannot exceed €100.000,00.**

Budget categories allowed:

Direct research costs (excluding personnel): the standard way of budget calculation, based on an itemized list of actual costs, must be employed. Enter the amount of money needed for research costs, divided into the following subcategories:

- consumables and supplies (examples: plasticware, reagents, chemicals, animals if applicable, etc.);
- small bench instrumentation (examples: electrophoresis power supplies, microcentrifuges, PCR machines etc.);
- services (examples: sequencing, microarray, histology, patent filing costs, etc.);
- maintenance contracts (examples: service contracts for large instruments; animal facilities contracts if outside the Hosting Institution);
- publication costs (most likely none in the first year of the project, as it takes time to obtain publishable data);
- meetings and travel costs.

PI salary and personnel: **This grant is meant to cover the salary for maximum two fellows or one fellow and the PI.**

PI salary: please click on “edit costs” to insert the PI costs details.

Man/year effort: please indicate the percentage of time that will be devoted to the actual performance of the work. **The PI must be at least at 50% of the time on the project.**

Financial support (partial or full): please indicate the amount of financial support (*e.g.* fellowship) requested for the PI, if any. The financial support can cover **maximum half of the PI salary** and can be requested only if strictly necessary (*i.e.* only in case the Hosting Institution cannot afford to pay the full amount of his/her stipend). In this case, the salary support will be negotiated with and given to the PI by the Hosting Institution, which will have all the administrative responsibility.

Personnel efforts/costs: please click on “edit costs” to insert the Personnel costs details.

Man/year effort: please indicate the percentage of time that will be devoted to the actual performance of the work. Fellows for whom a salary is requested must be at 100% of their time on the project. AIRC and FC discourage the habit of listing many units of personnel at marginal fractions of their time: therefore, make sure to have a sizable number of units of personnel devoting at least 75% of their time to the project. PhD students (or equivalent) can be listed as 100%, as the time commitments to courses is not taken into account.

Financial support: please indicate the amount of financial support (*e.g.* fellowship) requested; support will be provided only for **fellows at 100% of time** on the project. Financial support can be required, however, only for those fellows who do not have any other fellowship or equivalent source of income. Integration of the TRIDEO financial support by the Hosting Institution is permitted, but two salaries are not allowed. Applicants should ascertain that their Hosting Institution can take on fellows under this provision. The general policy of AIRC is to not provide financial support for candidates over 35 years old; in addition, the financial support requested for fellows should be consistent with the gross amount provided to fellows awarded an AIRC/FIRC fellowship for Italy (€25.000/year or, in case the fellow relocates form a different city or region, €30.000/year).

In case an AIRC/FIRC fellowship is awarded to one of the unit of personnel for whom financial support has been requested in this grant application, the PI will be allowed to use the financial support for another unit of personnel, if needed. In case, the name of the new fellowship recipient must be provided when submitting the budget adjustment or the grant renewal request.

Indirect costs: as defined in the “Funding” section of this Call, indirect costs will be supported up to 10% of the direct research costs (personnel included). Please enter the percentage charged by the Hosting Institution (from 0 to 10; 0,1 decimals are allowed); the system will automatically calculate the corresponding amount.

Overheads: as defined in the “Funding” section of this Call, overheads will be supported up to 10% of the sum of direct (personnel included) and indirect costs. Please enter the percentage charged by the Hosting Institution (from 0 to 10; 0,1 decimals are allowed); the system will automatically calculate the corresponding amount.

For each budget category please provide a description/justification of the amounts requested using the “Insert/Edit Notes” boxes. More specifically:

- for each section of the “Direct research cost”, provide a financial breakdown, on an item basis;
- for “PI Salary”: the PI salary can be requested only if strictly necessary (*i.e.* only in case the Hosting Institution cannot afford to pay the full amount of his/her stipend). Please, specify what portion of the full salary is requested. The salary must be integrated by other sources of funding;
- for “Personnel costs”: describe under what type of provision (*e.g.* fellowship, contract etc.) the fellows for whom financial support is sought will be hired. Use this section to justify exceptions for requesting financial support for clinicians (see the section “Personnel involved in the research”).

The “Insert/Edit notes” boxes are mandatory sections and must be completed: write n/a if no expenses are foreseen for any particular category of costs.

In the “Institutional Letter of Indirect Costs/Overheads” section at the bottom of the form please upload a letter, in PDF file format, indicating the percentage rate(s) of indirect costs and/or overheads charged by the Hosting Institution, even if the rate is zero. The letter must be dated and signed by the Legal representative. Please note: the rate indicated in the letter must be consistent with the rate indicated in the budget form.

Existing/Pending Support

If the PI is receiving or expecting to receive grants from any funding agency (including AIRC and FC) during the period of support with the TRIDEO award, please list them, regardless of whether they overlap with the current proposal or not. For each grant, indicate: the funding agency, project title, duration, total amount of funding (in Euros) and degree of overlap (in terms of research plan) with the project presented with this application. In case already funded research projects overlap or are very similar to the current proposal, provide a justification for requesting additional support from AIRC and FC in the apposite box; also, please provide name and percentage of time committed of all personnel listed in the current application (including the PI) that are also involved in the other grant. A single unit of personnel cannot be allocated for more than 100% of the time. This applies to the sum of all grants, including those from agencies other than AIRC and FC.

Narrative biosketch

Please identify up to five major scientific accomplishments of the PI (but no more than five!) and explain how they helped advance the scientific knowledge in oncology. They may be seminal publications, patents, awards, significant teaching/mentoring activities, proprietary software and datasets, authored books. The goal is not to have a long list of achievements, but rather to focus on

those that have impacted most on the field. Upload the document as PDF file (maximum 1 page, approx. 500 words).

Reviewers to be excluded

Please note: this section is not mandatory. Applicants may indicate investigators they would like to exclude as potential reviewers (no more than two are allowed). Click on “Add reviewer” and enter the requested information, then click on “Save”.

Bio-Ethical Requirements

Check boxes as applicable for human and animal experimentation.

Research on humans

Please note that human experimentation is not limited to clinical studies with healthy volunteers and/or patients. **It includes use of human biological samples** (commercially available human cell lines *e.g.* from ATCC are exempt), human genetic material and human data collection (*e.g.* genetic information, health, etc.).

If the research plan includes Research in humans, the approval of the local Ethics Committee or Institutional Review Board (IRB) is mandatory. **The authorization must be valid for the entire duration of the grant** and a copy of such authorization must be provided, together with a copy of the informed consent form (if applicable).

The approval document issued by the Ethics Committee **MUST** indicate:

- the date when the IRB meeting was held; **approvals obtained more than 3 years ago (i.e. prior to 2012) are NOT acceptable;**
- the name of the applicant or of a unit of personnel included in the application;
- a clear reference to the studies described in the proposal (*e.g.* the title of the application).

In case biospecimens have been obtained by external sources/collaborators, the clearance documents must be provided by the collaborator’s research center.

In any case, if the research deals with human biological samples, genetic materials or data collection, the research proposal should include information about:

- how the samples, materials or data are collected;
- whether the samples, materials or data are collected specifically for the proposed research project;
- how the samples, materials or data are dismissed.

If the IRB approval is available at the time of submission, check the box “I have obtained the clearance from the competent Ethics Committee/Institutional Review Board...” and upload it as PDF file by clicking on “Select” under the “Research on humans: clearance from Ethics Committee” header.

If the approval from the Ethics Committee is not available by the submission deadline, the PI must obtain it **by November 15th 2015**. Check the box “I have not obtained the clearance from the competent Ethics Committee/Institutional Review Board yet, but I have requested it ...” and, when available, upload it as PDF file in the “Submissions” section of the AIRC account (click on “The following required actions are pending” and on the link “Upload required document”). Alternatively, please send it to the AIRC Peer Review Office by e-mail (airc.direzione-scientifica@airc.it).

Research on animals

Experimentation on animals (vertebrates, cephalopods and foetal forms of mammals) must conform to all regulations protecting animals used for research purposes. The animal protocol(s) must be evaluated and authorized by the competent authorities (i.e. the Italian Ministry of Health), and a copy of the authorization must be provided. More specifically:

- If the authorization was obtained before Italy incorporated the Directive 2010/63/EU into its national law with the D.Lgs. 26/2014, please provide a copy of the approval of the local Animal Ethics Committee or Institutional Animal Care and Use Committee, together with a certification that the proposal was sent to the Ministry of Health under the “*Regime di comunicazione*” protocol. In case a special authorization was required (“*Decreto autorizzativo in regime di deroga*”), please provide such authorization.
- If the authorization was obtained after Italy incorporated the Directive 2010/63/EU into its national law with the D.Lgs. 26/2014, please provide the authorization by the Ministry of Health.

In any case, the authorization to carry out in vivo studies **must be valid for the entire duration of the grant**; if it expires during the course of the research project, a new approval must be provided to AIRC.

If the authorization is available at the time of the application submission, check the box “I have obtained the clearance from the Ministry of Health ...” and upload it as PDF file by clicking on “Select” under the “Research on animals: Clearance from Ethics Committee” header.

If the authorization is not available by the application submission deadline, the PI must obtain it **by November 15th 2015**. Check the box “I have not obtained the clearance from the Ministry of Health yet, but I have requested it ...” and, when available, upload it as PDF file in the “Submissions” section of the AIRC account: click on “The following required actions are pending” and on the link “Upload required document”. Alternatively, please send it to the AIRC Peer Review Office by e-mail (airc.direzione-scientifica@airc.it).

Research supported by AIRC that involves animal experimentation must comply with the principle of the Three Rs (3Rs) to Replace, Reduce and Refine the use of animals in research, as required by national and international rules. Please upload a document in the “Research on animals: Principles of the 3Rs” section, describing how the three Rs have been implemented in the research plan (e.g. explain why the anticipated results and benefits of the proposed research justify the use of animals, and why methods avoiding the use of living animals cannot be used; provide details and justification on the number of animals proposed for the research plan; describe all actions that will be taken to avoid or minimize pain and distress; etc.).

By signing the Bio-Ethical requirements page in the PDF file of the application, the applicant declares that the research studies are accurately described in the proposal and conform to all regulations protecting animals used for research purposes, including those of the D.Lgs. 26/2014, and that the experiments described in the proposal will be performed following the guidelines described in: Wolfensohn S, Lloyd M: “Handbook of Laboratory Animal Management and Welfare, 4th Edition” (Wiley-Blackwell, 2013).

Please note: Ethics Committee(s) approval(s) for human and/or animal research are not necessary for the assessment of the scientific merit of an application, during the review; however, **if the application is approved, funds will be granted only if the required Ethical Committee certifications have been sent to AIRC**. AIRC is not responsible for any inaccuracy in the ethical documentation provided and does not accept any liability for harm to participants in AIRC funded trials.

Proposal PDF Draft

At any time during the application process a PDF draft file of the proposal can be generated and checked: go to “Check and submit” (on the lower left of the main page), click on “Create draft” and then on “Open submission draft”. It is strongly suggested that after all forms have been correctly filled out, and prior to proceeding with the final submission, the PDF Draft and its content are carefully read, controlled and verified.

Final Full Proposal Submission (online and by regular mail)*Online submission*

To submit the application, go to “Check and submit” (on the lower left of the main page). All mandatory sections of the application form must be completed and must have the green flags before finalizing the submission.

Only after having ascertained that all data are correctly reported in the PDF Draft of the proposal, please proceed to proposal submission by clicking on “submit”.

Applicants will receive a confirmation of the submission by e-mail. The final PDF file will be available in the “Your submissions archive” section of the Personal Area, and a copy should be saved for future reference.

Paper submission

For paper submission, please print only these pages:

- Title page;
- Abstract;
- Budget form;
- Bio-Ethical requirements page;
- only if research in humans is planned: Clearance from the Ethics Committee;
- Declaration on affiliation.

Sign and stamp in the appropriate spaces: the signatures of the PI and of the Legal representative are both required in the Title page, the Budget form and the Declaration on affiliation: **by signing the Title page, the PI and the Legal representative acknowledge and agree to all terms and conditions of this Call. In addition, the Legal representative declares that should the application be funded, the PI will be affiliated with the Hosting Institution for the entire duration of the grant and will be allowed to carry out the research project in the Hosting Institution.** The applicant’s signature is required in the Bio-Ethical requirements page as well. Paper documentation marked with “draft” is not valid. Please print the requested pages only after completion of the submission online.

Please send all paper documentation required to the following address:

AIRC, Direzione Scientifica, via San Vito 7, 20123 Milano.

If these documents are not sent by the indicated deadline, or if AIRC does not receive them, applications will not be reviewed.

KEYWORDS IN ALPHABETICAL ORDER

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

KEYWORDS IN ALPHABETICAL ORDER

DNA recombination
DNA repair
DNA replication
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
Exosomes and/or endogenous microvesicles
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-proteins and/or GPCR
Granulocytes
Growth factors and/or receptors
Growth induction and/or growth arrest
GVDH and/or Graft versus Tumor
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)
Hippo pathway
Histone modifications
HLA/Major Histocompatibility Complex (MHC)
Hodgkin's lymphoma
Homologous recombination
Hormones
Human Papilloma Virus (HPV)
Hypoxia/Hypoxia-inducible Factors (HIF-1)
Immune escape
Immunization
Immuno-editing
Immunohistochemistry
Immunosuppression and/or suppressor cells
Immunotherapy
In vitro imaging and/or live cell imaging
In vivo imaging

KEYWORDS IN ALPHABETICAL ORDER

Infection
Inflammation and/or inflammatory cytokines
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
Jak/Stat pathway
Kidney ca.
Kinase/Kinome
Lentivirus
Leukaemia
Lipid metabolism
Liver development and/or regeneration
Loss of heterozygosity (LOH)
Lung ca.
Lymphatics and/or lymphangiogenesis
Lymphocyte differentiation
Lymphomas
Macrophages and/or monocytes
Magnetic resonance imaging (MRI)
MAP Kinases
Mass spectrometry
Mathematical modeling
Matrix metalloproteases (MMP) and/or inhibitors
MDM2
Medulloblastoma
Melanoma
Membrane biology
Mesothelioma
MET/HGF
Metabolism/Metabolomics
Metallo-drugs
Metastasis
Microarrays
Microenvironment
microRNA
Microscopy
Minimal Residual Disease (MRD)
Mitochondria
Mitosis
Monoclonal antibodies (mAbs) and/or immunoconjugates
Mouse models
mRNA processing
mRNA translation
Multidrug resistance (MDR)
Mutation (somatic and/or germline)
Myc
Myeloma
Nanotechnology/Nanoparticles
Netrin receptors
Neuroblastoma
Neuroendocrine tumors
Next generation sequencing
NF- κ B 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
Oncogenes
Oncogenic virus/Viral oncology
Organic compounds
Osteopontin
Osteosarcoma
Ovarian ca.
Oxidative stress and/or Reactive Oxygen Species (ROS)
p21 - activated kinases (PAK)
p53, p63, p73
Palliative care
Pancreas ca.
PDGF and/or receptors
Pediatric tumors
Peptides as drugs
PET and/or PET-CT
Phage display
Phagocytes and/or phagocytosis
Pharmacogenetics/Pharmacogenomics
Pharmacokinetics

KEYWORDS IN ALPHABETICAL ORDER

Pharmacology
Phosphatases
Phospholipids
Phosphorylation
PI3K/Akt/PTEN/mTOR pathway
Poly-ADP-ribose polymerase (PARP)
Polymorphisms/SNPs
Post-translational modification
Precancerous lesions
Preclinical studies
Prevention and/or chemoprevention
Prognosis
Prostaglandins
Prostate ca.
Proteasome
Protein microarrays
Proteomics
Radionuclide therapy
Radiosensitivity and/or resistance
Radiotherapy
Radiotoxicity
RAS/RAS inhibitors
Rb/Rb family
Response and/or resistance to therapy
RET
Retinoic acid and/or receptors
Retrospective studies
Rho GTPases family
Risk factors
RNA binding proteins
RNA splicing
Sarcoma
Screening
Senescence
Signal transduction inhibitors
siRNA and/or non coding RNA
Small molecule inhibitors
Smoking
Soft tissue tumors
Solid tumors
SPECT
Spheroids/3D cultures
Src family
Staging
Statistics
Stress response
SUMO and/or sumoylation
Surgery
Survival analysis
Synthetic lethality
Systems biology
T cells/TCR
T helpers
Target therapy
Telomere and/or telomerase
Testis ca.
TGF and/or receptors
Thymoma
Thyroid ca.
Thyroid hormone
Tissue microarrays (TMA)
TNF and/or receptors
Tolerance
Toll-like receptors (TLR)
Topoisomerase
TRAIL
Transcription
Transcription factors
Transformation assays
Transgenic mice
Translesion synthesis
Translocation
Transplantation
Treg cells
Triple negative breast ca.
Tumor antigen
Tumor dormancy
Tumor suppressor genes
Tumor-stroma interaction
Tyrosine kinase receptors (TKR) and/or inhibitors
Ubiquitin and/or ubiquitination
Ultrasound
Urokinase-Plasminogen System (uPA, uPAR, PAI)
Vaccine
VEGF and/or receptor
Virology

KEYWORDS IN ALPHABETICAL ORDER

Von Hippel-Lindau (VHL)

Wilms' Tumor Gene (WT1)

Xenopus

Yeast

Zebrafish

KEYWORDS BY TOPIC

Adhesion and stroma

Adhesion dynamics
Cadherins
Caveolin
Cell adhesion and/or cell adhesion molecules
Cell migration, motility and/or invasion
Cell polarity
Cytoskeleton
Extracellular Matrix (ECM)/Stroma
Focal Adhesion/FAK
Integrins and/or Integrin-linked kinase (ILK)
Matrix metalloproteases (MMP) and/or inhibitors
Microenvironment
Osteopontin
Tumor-stroma interaction
Urokinase-Plasminogen System (uPA, uPAR, PAI)

Angiogenesis

Angiogenesis and/or vasculogenesis
Endothelial cells
Hypoxia/Hypoxia-inducible Factors (HIF-1)
Lymphatics and/or lymphangiogenesis
VEGF and/or receptor
Von Hippel-Lindau (VHL)

KEYWORDS BY TOPIC

Cell death and apoptosis

Apoptosis
Autophagy
bcl2 family
Caspases
Fas and/or FasL
Inhibitor of apoptosis proteins (IAPs)
Mitochondria
Non apoptotic cell death
p53, p63, p73
Senescence
TRAIL

Clinical topics

Cachexia
Computer Tomography (CT Scan)
Diagnosis
Drug toxicity
Endocrinology
GVHD and/or Graft versus Tumor
Magnetic resonance imaging (MRI)
Metastasis
Minimal Residual Disease (MRD)
Nuclear medicine
Palliative care
PET and/or PET-CT
Prognosis
Retrospective studies
SPECT
Staging
Survival analysis
Ultrasound
Transplantation

KEYWORDS BY TOPIC

Genes, proteins and miscellanea

ATM pathway
ATR pathway
BCR-Abl/Abl
Bone morphogenetic protein (BMP)
BRAF/RAF kinases
BRCA
Embryonic development
Endocytosis
Endoplasmic reticulum (ER)
Epigenetics
Epithelial mesenchyme transition (EMT)
Exosomes and/or endogenous microvesicles
FGF and/or receptor
Glucocorticoids and/or receptors
Glucose metabolism and/or Warburg effect
Glycoproteins and/or glycosylation
Golgi
Heat shock proteins (HSP)
High Mobility Group Proteins (HMG)
Ion channels
Lipid metabolism
Liver development and/or regeneration
MDM2
Membrane biology
Myc
Netrin receptors
Nitric oxide
Oncogenes
p21 - activated kinases (PAK)
Phosphatases
Phospholipids
Poly-ADP-ribose polymerase (PARP)
Proteasome
RNA binding proteins
Stress response
SUMO and/or sumoylation
Telomere and/or telomerase
Topoisomerase
Ubiquitin and/or ubiquitination
Wilms' Tumor Gene (WT1)

KEYWORDS BY TOPIC

Genetics

Aneuploidy
Centrosome
Chromatin remodeling
Cytogenetics and/or chromosome alterations
DNA damage
DNA double strand break repair (DSBR)
DNA methylation
DNA recombination
DNA repair
DNA replication
DNA single strand break repair (SSBR)
Functional genomics
Fusion genes
Gene alteration/gain or loss
Gene expression and/or profile
Gene regulation
Genetics
Genome wide screening/GWAS
Genomic imprinting
Genomic/Genetic instability
Genomics
Hereditary DNA repair disorders
Histone modifications
Homologous recombination
Loss of heterozygosity (LOH)
microRNA
Mitosis
mRNA processing
mRNA translation
Mutation (somatic and/or germline)
Nuclear structures
Pharmacogenetics/Pharmacogenomics
Polymorphisms/SNPs
Post-translational modification
RNA splicing
siRNA and/or non coding RNA
Synthetic lethality
Transcription
Transcription factors
Transformation assays
Translesion synthesis
Translocation
Tumor suppressor genes

KEYWORDS BY TOPIC

Immunology

Autoimmunity/Autoantibodies

B cells

Chemokines

Costimulatory molecules

COX2

CTL

Cytokines/Interleukins

Dendritic cells

Granulocytes

Hematopoiesis

HLA/Major Histocompatibility Complex (MHC)

Immune escape

Immunization

Immuno-editing

Immunosuppression and/or suppressor cells

Immunotherapy

Infection

Inflammation and/or inflammatory cytokines

Innate immunity

Interferons

Lymphocyte differentiation

Macrophages and/or monocytes

Monoclonal antibodies (mAbs) and/or immunoconjugates

NF- κ B family

NK and/or NKT cells

Phagocytes and/or phagocytosis

Prostaglandins

T cells/TCR

T helpers

TNF and/or receptors

Tolerance

Toll-like receptors (TLR)

Treg cells

Tumor antigen

Tumor dormancy

Vaccine

KEYWORDS BY TOPIC

Methods

Animal models
Biochemistry
Bioinformatics
Biomolecular modelling
Biophysics
C.elegans
Chemistry
Comparative genomics hybridization (CGH)
Computational biology
Crystallography
Docking
Drosophila
Epidemiology
Flow cytometry
Fluorescence in situ hybridization (FISH)
Fluorescence resonance energy transfer (FRET)
Functional validation of target genes
Immunohistochemistry
In vitro imaging and/or live cell imaging
In vivo imaging
Mass spectrometry
Mathematical modeling
Microarrays
Microscopy
Mouse models
Nanotechnology/Nanoparticles
Next generation sequencing
NMR spectroscopy
Phage display
Protein microarrays

Proteomics
Spheroids/3D cultures
Statistics
Systems biology
Tissue microarrays (TMA)
Transgenic mice
Xenopus
Yeast
Zebrafish

Risk factors

Aging
Biomarkers
Body mass index (BMI) and/or obesity
Carcinogenesis
Diet
Genotoxicity
Metabolism/Metabolomics
Organic compounds
Oxidative stress and/or Reactive Oxygen Species (ROS)
Precancerous lesions
Prevention and/or chemoprevention
Risk factors
Screening
Smoking

KEYWORDS BY TOPIC

Signaling and cell cycle

Androgen and/or receptors
Beta-catenin/Wnt pathway
Cell cycle
Cell cycle checkpoint G1/S
Cell cycle checkpoint G2/M
Cell differentiation and/or differentiation therapy
Cell signaling
Crosstalk
Cyclic AMP
Cyclins and/or inhibitors
Cytokinesis
EGF and/or receptors
Estrogens and/or receptors
Folate and/or receptor
G-proteins and/or GPCR
Growth factors and/or receptors
Growth induction and/or growth arrest
Hedgehog pathway
HER1-2-3-4
Hippo pathway
Hormones
Insulin
Insulin-like growth factor (IGF) and/or receptors
Jak/Stat pathway
Kinase/Kinome
MAP Kinases
MET/HGF
Notch pathway
Nuclear receptor
PDGF and/or receptors
Phosphorylation
PI3K/Akt/PTEN/mTOR pathway

RAS/RAS inhibitors
Rb/Rb family
RET
Retinoic acid and/or receptors
Rho GTPases family
Src family
TGF and/or receptors
Thyroid hormone
Tyrosine kinase receptors (TKR) and/or inhibitors

Stem cells

Cancer stem cells
CD133/Stem cell markers
Circulating tumor cells
Hematopoietic stem cells
Normal stem cells

KEYWORDS BY TOPIC

Types of tumors

ALL
AML
Bladder tumor
Bone disease
Brain and/or nervous system tumors
Breast ca.
Burkitt lymphoma
Cervix or endometrial ca.
CLL
CML
Colorectal and/or Intestinal ca.
Gastric ca.
Glioma and/or glioblastoma
Gynecological tumors
Head and neck ca.
Hematologic malignancies
Hepatocellular carcinoma (HCC)
Hereditary tumors
Hodgkin's lymphoma
Kidney ca.
Leukaemia
Lung ca.
Lymphomas
Medulloblastoma
Melanoma
Mesothelioma
Myeloma
Neuroblastoma
Neuroendocrine tumors
Non melanoma skin tumors
Osteosarcoma
Ovarian ca.
Pancreas ca.
Pediatric tumors
Prostate ca.
Sarcoma

Soft tissue tumors
Solid tumors
Testis ca.
Thymoma
Thyroid ca.
Triple negative breast ca.

Therapies

Adjuvant therapy
Anti-angiogenic therapy
Antibody/mAb therapy
Aromatase and/or inhibitors
Chemotherapy and/or chemotherapeutic drugs
Clinical practice guidelines
Clinical trials
Combination therapy
Drug delivery
Drug discovery and/or development
Drug response and/or resistance
Drug screening
Gene therapy
Metallo-drugs
Multidrug resistance (MDR)
Peptides as drugs
Pharmacokinetics
Pharmacology
Preclinical studies
Radionuclide therapy
Radiosensitivity and/or resistance
Radiotherapy
Radiotoxicity
Response and/or resistance to therapy
Signal transduction inhibitors
Small molecule inhibitors
Surgery
Target therapy

KEYWORDS BY TOPIC

Viruses

Adenovirus

AIDS/HIV/Kaposi

Epstein-Barr Virus (EBV)

Hepatitis B virus (HBV)

Hepatitis C virus (HCV)

Herpes virus

Human Papilloma Virus (HPV)

Lentivirus

Oncogenic virus/Viral oncology

Virology