

CALL FOR RESEARCH PROPOSALS

AUTOLOGOUS BLOOD TRANSFUSION (ABT)

The World Anti-Doping Agency (WADA) is the international agency leading the collaborative campaign for doping-free sport.

For many decades, blood doping has been a hallmark for athletes that manipulate their blood to increase oxygen supply to muscles, so as to gain a competitive advantage, particularly in endurance sports. This includes the use of homologous (HBT) and autologous blood transfusions (ABT). A robust flow cytometric test for HBT was developed and has been implemented successfully since the 2004 Athens Olympic Games. This test can differentiate small populations of red blood cells (RBC) that are antigenically distinct from the host's for several weeks after transfusion. Therefore, HBT are unlikely to have been used during the last decade and athletes have favored instead doping with ABT.

Unlike HBT, detection of ABT has been much more challenging. With the development of the hematological module of the Athlete Biological Passport (ABP) to curb the use of blood manipulations, blood doping has evolved from the transfusion of one to two units of blood to micro ABT, that is, 200 mL or less of blood administered more frequently. Over the past years, several anti-doping authorities, including WADA, have committed research resources to develop methods for detection of ABT. Several concepts and methods have been explored, including surface markers from aged RBC; detection of leaked plasticizers from storage bags; -omics, neocytolysis; and physical properties of frozen RBCs. Unfortunately, even if some of these projects delivered some interesting findings, none of them have resulted in a valid anti-doping test.

DESCRIPTION

WADA invites researchers, with expertise in the field of hematology, to apply for funding to undertake research projects aimed at delivering an anti-doping method that detects autologous blood transfusion (ABT).

At a minimum, the method should:

- be applicable for blood and/or urine;
- be sensitive enough to detect ABT in a proportion of less than 150 mL (or 4%) of transfused, refrigerated or frozen, red blood cells (RBCs) with a window of detection of at least 24/36 hours;
- have a degree of specificity of 99.99% or above; and
- be transferrable to WADA-accredited laboratories for routine anti-doping testing.

FINANCIAL

Funding will be provided through WADA's Research Program. The Agency anticipates funding two to three grants for the initial proof of concept phase.

The funding would be up to:

- USD 300,000 per project for initial proof of concept
- USD 300,000 for validation of proof of concept
- USD 200,000 for transfer to accredited laboratories
- USD 200,000 for routine implementation in accredited laboratories

Any requests for a higher level of funding should be discussed with WADA's Science Department for which contact information is provided below.

PROCESS AND TIMELINES

The deadline for proposal submission is **31 January 2016**.

The review process will involve independent experts and expert members of WADA's Science and Medical Committees with a final decision by the WADA Executive Committee. The review process is anticipated to run from February to April for a release of funding for the selected project(s) in May 2016.

For application forms, to submit applications or for any other information, please contact:

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