Scientific Research Grants Topics

Higher priority is granted to proposals addressing:

- Detection/improvement of detection/quantification of peptide and protein hormones and growth factors, preferably by, but not limited to, chromatography-mass spectrometric methods;
- Improved window (retrospectivity) of detection of prohibited substances/methods (*e.g.,* detection of new long-term metabolites including administration studies, improved methodologies of detection, analyte multiplexing);
- Pharmacokinetic studies to establish thresholds or minimum reporting levels of prohibited substances or their metabolites (*e.g.*, beta-2 agonists, stimulants) to distinguish permitted (*e.g.,* out-of-competition or route) from prohibited use, natural sources vs. intended use or presence in food residues;
- Detection of autologous blood transfusion, including validation of candidate biomarkers or molecular/cellular/subcellular signatures;
- The Athlete Biological Passport (*e.g.,* new biomarkers of doping or confounding factors relevant to the hematological, steroidal or endocrine [markers of growth hormone] modules); and
- Selected Certified Reference Material synthesis (please consult WADA for materials needed).

Proposals are classified as follows:

A. Detection of doping substances/methods: methodologies in analytical chemistry; and, in particular, research addressing:

- The detection of doping substances and methods using chromatography-mass spectrometric methods or new methods in analytical chemistry.

B. Detection of doping substances/methods: affinity-binding and biochemical methodologies; and, in particular, research addressing:

- The detection of doping substances and methods using immunoassays, other assays based on affinity-binding reagents or other biochemical methods; and
- Multiplexing of validated affinity binding-based assays and other biochemical approaches.

C. Pharmacological studies of doping substances/methods; and, in particular, research addressing:

- Establishment and/or refinement of threshold/reporting levels of prohibited substances or their metabolites in urine/blood/dried blood spots that may be produced endogenously, or present in foodstuff or as food contaminants, or associated with doping effects above a certain dose or depending on route or time of administration;
- Pharmacokinetics/pharmacodynamics/metabolism of prohibited substances and methods including impact of sex, genetics, and environmental factors on excretion, detection or biological action;
- Doping potential and strategies for detection of drugs, drug interactions (cocktail formulations) or drug micro-dosing; and
- Long-term metabolites or markers of doping substances.

D. The Athlete Biological Passport (ABP); and, in particular, research addressing:

- Discovery and validation of new discriminant markers for the Hematological, Steroidal and Endocrine modules of the ABP, including transcriptomic, metabolomic and proteomic approaches to discovery of new markers;
- Evaluation of confounding factors and validation of new biomarkers that increase the specificity of the current modules; and
- Expansion of the ABP approach to other target analytes (*e.g.,* additional peptide hormones as part of the endocrine module), analytical methods for detecting ABP markers, alternative sample matrices, and other approaches for analysis of biological data.

E. Detection of doping substances/methods: molecular biology, "omics" and miscellaneous methodologies; and, in particular, research addressing:

- The detection of gene doping, including new sensitive and multiplexed methods to detect emerging gene transfer, gene silencing, and gene editing technologies evaluated in samples from human or animal studies;
- Validation of molecular and metabolic signatures to detect use of prohibited substances and methods (*e.g.,* autologous blood transfusion); and
- Detection of prohibited cell therapies (*e.g.,* genetically modified cells) in muscle(s), connective tissues or other tissues and organs relevant in sport.

F. Scientific innovations* to improve anti-doping programs; and, in particular, research addressing:

- Data analytics, artificial intelligence to identify trends in doping, to improve the detection of prohibited substances and/or methods, to develop tools to improve doping detection;
- Optimization of resources (efficacy and cost) in planning testing programs, specific analyses and sample retention;
- Improvements to the athletes' experience of sample collection; and
- Evaluation of the likelihood of positive test scenarios in results management.

* Projects primarily focused on social science research are not eligible.