



821 CORPORATE DRIVE · LEXINGTON, KY 40503 · PHONE: 859-224-2844 · WWW.RMTCNET.COM

To: The Association of Racing Commissioners, International

From: Dr. Dionne Benson

Date: November 20, 2018

Re: Proposed Classifications

The RMTC submits the attached recommendations for drug classification modifications and additions. Please feel free to contact RMTC staff if you have any questions.

Please note, that many of these classifications address substances on the Out of Competition Prohibited Substances list which are currently unclassified. The last 3 on the list are in response to commission or trainer inquiries.

The attached list except the last three (CBD, THC, Cardarine) were discussed and voted on by the RMTC Board at its most recent meeting. At that meeting, the board unanimously voted in favor of the classifications.

After that meeting, the RMTC was asked to consider CBD, THC, and Cardarine. We did so by conference call with the SAC and email at the RMTC Board level. The RMTC vote on CBD, THC, and Cardarine were as follows:

- 20/20 voting members were in favor for CBD to be classified as a 3B substance.
- 20/21 voting members were in favor of classifying THC as a 1A substance.
 - National HBPA comment: “THC is a likely contaminant of most CBD oils, albeit at very low concentration. So, we will voice concerns with making it a 1A. However, as long as the understanding is expressed that penalties will commensurate with the amount found, because in states where marijuana is legal we will likely see cases of THC as an environmental/human contaminate possibly. If that arises, we need to be prepared to address these as such with less severe rulings/suspensions/ fines”.
 - OakTree Member comment: “THC should have similar provisions as cocaine and morphine to reduce to a B penalty” (for unintentional exposures).
- 20/21 voting members voted in favor of a 2A classification for Cardarine
 - National HBPA comment: “At present Cardarine, we know has similar properties to zipaterol and ractopamine and they are both currently in class 2A. However, we are also aware Cardarine is being used by bodybuilders and may very well be a substance where environmental contamination could become an issue. Again, if that arises, we need to be prepared to address these as such with less severe rulings/suspensions/ fines”.

On all substances the following comments were received:

Arabian Jockey Club: "These drugs have no place as therapeutics yet"

AQHA: "These need to be prohibited substances".

<u>Unclassified Drug</u>	<u>FDA Approval</u>	<u>Drug Type</u>	<u>Proposed Drug Class</u>	<u>Justification</u>	<u>Proposed Penalty Class</u>	<u>Justification</u>
1-androstenediol (5a-androst-1-ene-3β, 17β-diol)	No	endogenous weak androgen steroid hormone and intermediate in the biosynthesis of testosterone from dehydroepiandrosterone (DHEA) and of estrone	3	Steroid	B	Endogenous AAS
1-androstenedione (5a-androst-1-ene-3, 17-dione)	No	endogenous weak androgen steroid hormone and intermediate in the biosynthesis of testosterone from dehydroepiandrosterone (DHEA) and of estrone	3	Steroid	B	Endogenous AAS
Bolandiol (estr-4-ene-3β, 17β-diol)	No	AAS	3	Steroid	A	AAS lacking FDA approval
Drostanolone	No	AAS	3	Steroid	A	AAS lacking FDA approval
Metandienone	No	AAS	3	Steroid	A	AAS lacking FDA approval
Metenolone	No	AAS	3	Steroid	A	AAS lacking FDA approval
Metribolone	No	AAS	3	Steroid	A	AAS lacking FDA approval
1-testosterone (17β-hydroxy-5a-androst-1-en-3-one)	No	chemically related to anabolic steroids	3	Steroid	A	AAS lacking FDA approval
Androstenediol (androst-5-ene-3β, 17β-diol)	No	weak androgen and estrogen steroid hormone and intermediate in the biosynthesis of testosterone from dehydroepiandrosterone (DHEA)	3	Steroid	B	Metabolite of a B substance
Androstenedione (androst-4-ene-3, 17-dione)	No	endogenous weak androgen steroid hormone and intermediate in the biosynthesis of testosterone from dehydroepiandrosterone (DHEA) and of estrone	3	Steroid	B	Endogenous AAS
Dihydrotestosterone (17β-hydroxy-5a-androstan-3-one)	No	endogenous androgen sex steroid and hormone	3	Steroid	B	Endogenous AAS
Prasterone (dehydroepiandrosterone, DHEA, 3β-hydroxyandrost-5-en-17-one)	Yes	inactive endogenous steroid	3	Steroid	B	Endogenous AAS
<i>The endogenous AAS isomer and metabolites listed:</i>						
<i>5a-androstane-3a,17a-diol</i>	No	testosterone metabolite	3	Testosterone Link	B	Metabolite of a B substance
<i>5a-androstane-3a,17β-diol</i>	No	testosterone metabolite	3	Testosterone Link	B	Metabolite of a B substance
<i>5a-androstane-3β,17a-diol</i>	No	testosterone metabolite	3	Testosterone Link	B	Metabolite of a B substance
<i>5a-androstane-3β,17β-diol</i>	No	testosterone metabolite	3	Testosterone Link	B	Metabolite of a B substance
<i>5β-androstane-3 α, 17β-diol, androst-4-ene-3a,17a-diol</i>	No	androstenediol that is converted to testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>Androst-4-ene-3a,17β-diol</i>	No	an androstenediol that is converted to testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>Androst-4-ene-3β,17a-diol</i>	No	androstenediol that is converted to testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>Androst-5-ene-3a,17a-diol</i>	No	androstenediol that is converted to testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>Androst-5-ene-3a,17β-diol</i>	No	prohormone of testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>Androst-5-ene-3β,17a-diol</i>	No	prohormone of testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>4-androstenediol (androst-4-ene-3β,17β-diol)</i>	No	androstenediol that is converted to testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>5-androstenedione (androst-5-ene-3,17-dione)</i>	No	prohormone of testosterone	3	Testosterone Link	B	Metabolized to a B substance
<i>Androsterone (3 β-hydroxy-5 α – androstan-17-one)</i>	No	a metabolite of testosterone and dihydrotestosterone (DHT)	3	Testosterone Link	B	Metabolite of a B substance
<i>Epi-dihydrotestosterone</i>	No	androgenic metabolite of testosterone	3	Testosterone Link	B	Metabolite of a B substance

<u>Unclassified Drug</u>	<u>FDA Approval</u>	<u>Drug Type</u>	<u>Proposed Drug Class</u>	<u>Justification</u>	<u>Proposed Penalty Class</u>	<u>Justification</u>
<i>Epitestosterone</i>	No	endogenous steroid and an epimer of the androgen sex hormone testosterone	3	Testosterone Link	B	Endogenous, stereoisomer of a B substance.
<i>Etiocolanolone</i>	No	etiocholane steroid as well as an endogenous 17-ketosteroid that is produced from the metabolism of testosterone	3	Testosterone Link	B	Metabolite of a B substance
<i>7α-hydroxy-dhea</i>	No	naturally occurring steroid and a major metabolite of dehydroepiandrosterone (DHEA)	3	DHEA Link	B	Metabolite of a B substance
<i>7β-hydroxy-dhea</i>	No	naturally occurring steroid and a major metabolite of dehydroepiandrosterone (DHEA)	3	DHEA Link	B	Metabolite of a B substance
<i>7-keto-dhea; 19-</i>	No	a steroid produced by metabolism of the prohormone dehydroepiandrosterone (DHEA)	3	DHEA Link	B	Metabolite of a B substance
<i>Norandrosterone</i>	No	a detectable metabolite of nandrolone, an anabolic-androgenic steroid	3	Nandrolene Link	B	Metabolite of a B substance
<i>19-noretiocholanolone.</i>	No	a metabolite of nandrolone (19-nortestosterone) and bolandione (19-norandrostenedione)	3	Nandrolene Link	B	Metabolite of a B substance
Tibolone	No	synthetic steroid	3	Steroid	A	AAS lacking FDA approval
Darbepoetin (depo)	Yes	Bone marrow stimulant (Erythropoiesis-stimulating agents are medications which stimulates the bone marrow to make red blood cells)	1	Erythropoietin Link	A	Blood doping agent
EPO-Fc	No	fusion protein in human blood	1	Erythropoietin Link	A	Blood doping agent
<i>EPO-mimetic peptides (EMP):</i>						
<i>CNTO 530</i>	No	a biopharmaceutical consisting of a novel peptide that mimics the actions of erythropoietin, CNTO 530 produced sustained increases in red blood cell parameters	1	Erythropoietin Link	A	Blood doping agent
<i>Peginesatide</i>	Yes (Peginesatide Acetate)	an erythropoiesis-stimulating agent (ESA) indicated for the treatment of anemia due to chronic kidney disease (CKD) in adult patients on dialysis	1	Erythropoietin Link	A	Blood doping agent
<i>Methoxypolyethylene glycol-epoetin beta (CERA)</i>	Yes	an erythropoiesis-stimulating agent (ESA) indicated for the treatment of anemia associated with chronic kidney disease (CKD) in adult patients on dialysis and patients not on dialysis	1	Erythropoietin Link	A	Blood doping agent
<i>Non-erythroietic EPO-Receptor antagonists</i>						
<i>ARA-290</i>	No	a nonerythropoietic peptide engineered from erythropoietin	1	Erythropoietin Link	A	Blood doping agent
<i>Asialo EPO</i>	No	desialylated form of human glycoprotein hormone erythropoietin (EPO), which has been reported to be neuro-, cardio-, and renoprotective in animal models of organ injuries	1	Erythropoietin Link	A	Blood doping agent
<i>Carbamylated EPO</i>	No	may be a beneficial tissue-protective cytokine	1	Erythropoietin Link	A	Blood doping agent

<u>Unclassified Drug</u>	<u>FDA Approval</u>	<u>Drug Type</u>	<u>Proposed Drug Class</u>	<u>Justification</u>	<u>Proposed Penalty Class</u>	<u>Justification</u>
Roadustat (FG-4592)	No (in trials)	HIF prolyl-hydroxylase inhibitor and thereby increases endogenous production of erythropoietin, which stimulates production of hemoglobin and red blood cells	1	Erythropoietin Link	A	Blood doping agent
HIF activators (e.g. Argon, xenon)	Yes (some forms of xenon)	a key mediator of oxygen homeostasis that was first identified as a transcription factor that is induced and activated by decreased oxygen tension	3	Cardiovascular Effects	A	Blood doping agent
Chorionic Gonadotropin (CG)	Yes	a water soluble glycoprotein derived from human pregnancy urine	3	Hormone and behavioral effects	B	Used for behavior modification in colts / horses. There should be no restriction/regulation in fillies and mares
Luteinizing Hormone (LH)	No	a hormone produced by gonadotropic cells in the anterior pituitary gland. In females, an acute rise of LH triggers ovulation and development of the corpus luteum	3	Hormone and behavioral effects	B	Used for behavior modification in colts / horses. There should be no restriction/regulation in fillies and mares
Corticotrophind	No	a peptide hormone involved in the stress response	3	because of role in stress response	B	
<i>Growth Hormone (GH) and its releasing factors including:</i>						
<i>Growth Hormone Releasing Hormone (GHRH) and its analogues, e.g., CJC-1295, sermorelin and tesamorelin</i>	No	peptide analogue of growth hormone-releasing hormone which is used as a diagnostic agent to assess growth hormone secretion for the purpose of diagnosing growth hormone deficiency	3	Anabolic Effects	A	Anabolic agent lacking FDA approval
<i>Growth Hormone Secretagogues (GHS), e.g., ghrelin and ghrelin mimetics, e.g., anamorelin and ipamorelin</i>	No	hunger hormone, appetite-enhancing and anabolic effects	3	Anabolic Effects	A	Anabolic agent lacking FDA approval
<i>GH-Releasing Peptides (ghrps), e.g., alexamorelin, GHRP-6, hexarelin and pralmorelin (GHRP-2)</i>	No	a synthetic GH secretagogue	3	Anabolic Effects	A	Anabolic agent lacking FDA approval
<i>The following Growth Factors:</i>						
<i>Fibroblast Growth Factors (fgfs), Hepatocyte Growth Factor (HGF), Insulin-like Growth Factor-1 (IGF-1) and its analogues, Mechano Growth Factors (mgfs), Platelet-Derived Growth Factor (PDGF), Vascular-Endothelial Growth Factor (VEGF) and any other growth factor affecting muscle, tendon or ligament protein synthesis/degradation, vascularization, energy utilization, regenerative capacity or fiber type switching.</i>	No	a family of peptide cytokines that are important in the regulation of many tissues	3	Cardiac, Muscle effects	A	Lack FDA approval; no legitimate use in race horse.
<i>Aromatase inhibitors listed:</i>						
<i>Aminoglutethimide</i>	Yes	anti-steroid drug	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification

<u>Unclassified Drug</u>	<u>FDA Approval</u>	<u>Drug Type</u>	<u>Proposed Drug Class</u>	<u>Justification</u>	<u>Proposed Penalty Class</u>	<u>Justification</u>
Anastrozole	Yes	Aromatase inhibitors	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Androsta-1,4,6-triene-3,17-dione (androstatrienedione)	No	Aromatase inhibitors	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
4-androstene-3,6,17 trione (6-oxo)	No	Aromatase inhibitors	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Exemestane	Yes	Aromatase inhibitors	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Formestane	No	Aromatase inhibitors	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Raloxifene	Yes (as Raloxifene Hydrochloride)	selective estrogen receptor modulators-SERMs	3	Estrogen effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Tamoxifen	Yes (as Tamoxifen Citrate)	Estrogen receptor antagonist antineoplastic agent	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification

<u>Unclassified Drug</u>	<u>FDA Approval</u>	<u>Drug Type</u>	<u>Proposed Drug Class</u>	<u>Justification</u>	<u>Proposed Penalty Class</u>	<u>Justification</u>
Toremifene	Yes	Selective estrogen receptor modulator	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Clomiphene	Yes (as Clomiphene Citrate)	Estrogen modulator	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Cyclofenil	No	selective estrogen receptor modulator (SERM)	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
Fulvestrant	Yes	Estrogen receptor antagonist antineoplastic agent	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	Testolactone has B classification
<i>Activators of the AMP-activated protein kinase (AMPK),</i>						
<i>E.g., AICAR, and Peroxisome Proliferator Activated Receptor δ (pparδ) agonists (e.g., GW 1516);</i>	No	transcription factor involved in regulation of genes implicated in fatty acid oxidation, cholesterol metabolism, and thermogenesis	2	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	A	PPARs are experimental drugs without FDA approval
Insulins	Yes	protein hormone that is used as a medication to treat high blood sugar	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	
Trimetazidine	No	a drug for angina pectoris, the first cytoprotective anti-ischemic agent	3	Hormone and Metabolic effects, same classification as Testolactone on Human Olympic Guidelines	B	

<u>Unclassified Drug</u>	<u>FDA Approval</u>	<u>Drug Type</u>	<u>Proposed Drug Class</u>	<u>Justification</u>	<u>Proposed Penalty Class</u>	<u>Justification</u>
Thyroxine and thyroid modulators/hormones, including but not limited to those containing T4 (tetraiodothyronine/thyroxine), T3 (triiodothyronine), or combinations thereof.	Yes (as Levothyroxine)	Thyroid hormones	3	Hormone and Metabolic effects	C	FDA approval and has (limited) legitimate use in care of racehorses
Canrenone	No	steroidal antimineralocorticoid, active metabolite of spironolactone (a diuretic)	4	Corticoid	C	Metabololite of a C substance (See spironolactone below)
Etacrynic acid	Yes	Diuretic	3	Diuretic	C	Consistent w/other diuretics having FDA approval
Indapamide	Yes	Diuretic	3	Diuretic	C	Consistent w/other diuretics having FDA approval
Plasma expanders (e.g. Bycerol; intravenous administration of albumin, dextran, hydroxyethyl starch and mannitol)	No	Plasma expanders	3	for cardiovascular effects	A	No legit use in the racehorse. Lacks FDA approval
Spironolactone	Yes	Diuretic	3	Diuretic	C	Consistent w/other diuretics having FDA approval
Cannabidiol (CBD) ¹	Yes	Anti-epileptic, analgesic	2	Anti-anxiety	B	Similar to other anti-anxiety substances with FDA approval
THC (tetrahydrocannabinol) ²	No	Drug of human abuse	1	Calming	A	Drug of human abuse
Cardarine (GW-501516)	No	PPAR	2	Muscle/anabolic effects in humans, mice	A	No legit use in the racehorse. Lacks FDA approval

1 - This would include substances that are up to 0.3% THC

2 - Should consider whether this is treated like other 1A drugs of abuse (e.g., cocaine)