Supplementary data:

**Olympic Anti-Doping Laboratory: The Analytical Technological Road From 2016 Rio De Janeiro to 2021 Tokyo**

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**Figure 1S.Total number of samples analyzed in Olympic Sports**

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**Figure 2S.Total number of AAFs samples analyzed in Olympic Sports**

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**Figure 3S. Number of AAFs samples of ESAs, GHRFs and GH**

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| **Table S1. Percentage of selected substances identified as AAFs in each class in ADAMS (All Sports)** |
| **Name of substance/class** | **2019** | **2018** | **2017** | **2016** |
| **S1.1 Anabolic Agents** | **44%** | **44%** | **44%** | **43%** |
| Stanozolol | 18% | 17% | 20% | 21% |
| Drostanolone | 11% | 10% | 8% | 8% |
| 19-norandrosterone (26 cases consistent with an exogenous origin) | 11% | 11% | 14% | 0% |
| the GC/C/IRMS result is consistent with an exogenous origin | 10% | 12% | 11% | 11% |
| Boldenone (29 cases consistent with an exogenous origin) | 8% | 6% | 6% | 7% |
| Metandienone | 8% | 9% | 9% | 10% |
| Oxandrolone | 6% | 6% | 6% | 5% |
| Dehydrochloromethyl-testosterone | 6% | 8% | 6% | 4% |
| Metenolone | 5% | 5% | 4% | 4% |
| Trenbolone | 5% | 6% | 5% | 5% |
| Mesterolone | 3% | 4% | 3% | 3% |
| Methasterone | 2% | 1% | 1% | 1% |
| **S1.2 Other Anabolic Agents** |
| clenbuterol | 56% | 79% | 78% | 87% |
| enobosarm (ostarine) | 21% | 11% | 13% | 7% |
| LGD-4033 | 17% | 6% | 2% | 2% |
| tibolone | 3% | 1% | 2% | 2% |
| RAD140 | 1% | 1% | 2% | 1% |
| **S.2Peptide Hormones, Growth Factors and Related Substances** | **3%** | **3%** | **3%** | **3%** |
| Erythropoetin (EPO) | 60% | 52% | 48% | 40% |
| Methoxy polyethylene glycol‐epoetin beta (CERA) | 1% | 4% | 16% | 18% |
| Human Chorionic Gonadotrophin (hCG) | 10% | 10% | 12% | 16% |
| Ibutamoren  | 9% | 3% | 8% | 4% |
| **S.3 Beta-2 Agonists** | **4%** | **4%** | **4%** | **4%** |
| Terbutaline | 52% | 53% | 50% | 52% |
| Higenamine | 30% | 26% | 37% | 32% |
| Salbutamol | 7% | 8% | 8% | 9% |
| Vilanterol | 6% | 8% | 3% | 2% |
| **S.4 Hormone and Metabolic Modulators** | **9%** | **9%** | **8%** | **17%** |
| Tamoxifen | 22% | 20% | 20% | 8% |
| Meldonium | 22% | 32% | 25% | 71% |
| Clomifene | 20% | 16% | 20% | 8% |
| Anastrozole | 10% | 11% | 12% | 5% |
| **S.5 Diuretics and Other Masking Agents** | **16%** | **14%** | **15%** | **12%** |
| Hydrochlorothiazide | 21% | 22% | 23% | 32% |
| Furosemide | 29% | 29% | 35% | 26% |
| Canrenone | 10% | 10% | 13% | 10% |
| Chlorothiazide | 7% | 6% | 6% | 5% |
| % of all ADAMS reported findingsWADA testing Figures reports 2016-2019[165-168] |
| **Table S1. (Continued)** |
| **Name of substance/class** | **2019** | **2018** | **2017** | **2016** |
| **S.6 Stimulants** | **15%** | **15%** | **14%** | **13%** |
| Amfetamine | 15% | 16% | 18% | 20% |
| Methylphenidate | 22% | 15% | 19% | 17% |
| Methylhexaneamine (dimethylpentylamine) | 6% | 12% | 9% | 12% |
| Cocaine | 13% | 14% | 12% | 11% |
| Ephedrine | 4% | 5% | 5% | 5% |
| **S.7 Narcotics** | **1%** | **1%** | **2%** | **1%** |
| Methadone | 27% | 17% | 5% | 12% |
| Oxycodone | 23% | 33% | 10% | 16% |
| Morphine | 20% | 33% | 70% | 53% |
| Buprenorphine | 13% | 4% | 0% | 6% |
| **S.9 Glucocorticosteroids** | **6%** | **7%** | **5%** | **4%** |
| Prednisolone | 26% | 27% | 31% | 28% |
| Prednisone | 25% | 25% | 25% | 26% |
| Betamethasone | 10% | 12% | 10% | 16% |
| Triamcinolone acetondie | 19% | 25% | 14% | 10% |
| **P1. Beta-Blockers** | **0.5%** | **0.4%** | **0.3%** | **0.3%** |
| Propranolol | 45% | 33% | 17% | 21% |
| Carvedilol | 15% | 11% | 17% | 0% |
| Atenolol | 15% | 0% | 0% | 14% |
| Bisoprolol | 10% | 39% | 17% | 36% |
| Metoprolol | 5% | 11% | 42% | 21% |
| % of all ADAMS reported findingsWADA testing Figures reports 2016-2019 [165-168] |