ANALYSIS AND REPORTING OF TRIMETAZIDINE FINDINGS

The World Anti-Doping Agency wishes to draw the attention of the Laboratories to the following remarks and instructions on the analysis and reporting of trimetazidine (TMZ).

The detection of TMZ [1-(2,3,4-trimethoxybenzyl)piperazine] in urine may result from the metabolism of lomerizine [1-[bis(4-fluorophenyl)methyl-4-(2,3,4-trimethoxybenzyl)piperazine], a permitted drug used for the treatment of migraine.\textsuperscript{1,2,3}

\textbf{Note:} Lomerizine (the parent compound), which has a short half-life, can be found in urine at concentrations much lower than that of TMZ (minor Metabolite), in a ratio of 1/20 or less. However, the concentration of the lomerizine M6-Metabolite is usually higher than that of TMZ.


Therefore, when detecting TMZ in urine, Laboratories shall:

1. Test for the presence of the non-prohibited lomerizine AND its specific Metabolite(s) [at least the N-dealkylated M6 Metabolite, 1-Bis-(4-fluorophenyl)-methylpiperazine]⁴ using e.g. LC-MS/MS targeting the diagnostic precursor/product ion pairs shown below, which are obtained from the protonated molecules of TMZ, lomerizine and lomerizine M6-Metabolite;

2. Report the result as a Negative Finding if it is considered that the presence of TMZ in the Sample could have resulted from the permitted administration of lomerizine;

3. When reporting an Adverse Analytical Finding for TMZ, include a comment in the Test Report specifying “Neither lomerizine nor its Metabolite(s) (at least M6) were detected in the Sample”.

Should you have any further questions, please do not hesitate to contact the WADA Science Department.

⁴ The reference standards for lomerizine and its M6 Metabolite can be purchased from Sigma-Aldrich (L6295 and 552402, respectively) [https://www.sigmaaldrich.com/catalog/product/aldrich/552402?lang=en&region=CA](https://www.sigmaaldrich.com/catalog/product/aldrich/552402?lang=en&region=CA)