

# Validated Reference Material Pyrrolizidine alkaloids in rooibos tea

## P2116-RMRb



- Summary -

Please note:

Reference material P2116-RMRb is a validated control material and not a certified reference material. The reference material consists of 100 g of milled rooibos tea, which is spiked with five pyrrolizidine alkaloids and contains incurred residues of five more PAs (see table 1). The corresponding unspiked milled rooibos tea (80 g) is available as blank material P2116-BLRb. The blank material contains incurred residues of five pyrrolizidine alkaloids (“incurred” in table 1).

The reference material is validated in ring test P2116-RT with 16 laboratories. The spiked levels as well as the assigned values, which are calculated of the results of the participants of the ring test P2116-RT, are summarised in table 1.

Table 1. Spiked levels and assigned values

Parameter	Spiked level [µg/kg]	Assigned value [µg/kg]	Total number of results
Heliosupine-N-oxide	26	-	-
Indicine (sum) * <sup>1</sup>	93	92.2	14
Lasiocarpine-N-oxide	12	12.4	11
Retrorsine	75	70.1 * <sup>3</sup>	16
Senkirkine	85	78.9 * <sup>4</sup>	16
Retrorsine-N-oxide	incurred	39.4	15
Senecionine	incurred	35.3	15
Senecionine-N-oxide (sum) * <sup>2</sup>	incurred	155	14
Seneciphylline	incurred	25.4	15
Seneciphylline-N-oxide	incurred	93.6	15

\*<sup>1</sup> sum of indicine and lycopsamine.

\*<sup>2</sup> sum of senecionine-N-oxide, senecivernine-N-oxide and integerrimine-N-oxide.

\*<sup>3</sup> assigned value without correction for incurred residues in the blank material, for information only.

\*<sup>4</sup> assigned value without correction for incurred residues in the blank material, for information only.

Commission Regulation (EU) 2020/2040 amending Regulation (EC) No 1881/2006 is valid from July 2022 on. Up to now, not all laboratories included all 21 PAs as well as the 14 co-eluting PAs to the analytical scope applied for this ring test. Furthermore, reporting of the results is quite inhomogeneous. In order to evaluate comparable data, the sum of indicine and lycopsamine resp. the sum of senecionine-N-oxide, senecivernine-N-oxide and integerrimine-N-oxide are considered for the evaluation of the spiked PA indicine resp. the incurred PA senecionine-N-oxide.

Incurred residues of retrorsine and senkirkine were reported by the participants of P2116-RT. Assigned values of the incurred residues in the blank material are 12.1 µg/kg related to retrorsine resp. 14.7 µg/kg related to senkirkine. Consequently, the evaluation with respect to the trueness criterion was provided in the report related to the ring test P2116-RT for information only. However, the assigned values do not reflect relevant levels on incurred retrorsine resp. senkirkine if compared to the spiked levels even though the incurred levels were not subtracted from the results related to the reference material. The accepted ranges of retrorsine and senkirkine with respect to the trueness criterion are not specified for the reference material.