

C,H,N ELEMENTAL ANALYSIS OF (2S,3S)-(-)-3-METHYLPYRROLIDINE-2-CARBOXYLIC ACID

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The research was done by "EuroEA 3000" elemental analyzer of "EuroVector" company (Italy).

Carbon, hydrogen, nitrogen, sulfur and oxygen are the main elements contained in organic compounds and specifying their properties.

"EuroEA 3000" is an automatic device requiring minimal intervention of the operator and allowing to analyze not one (as in the case of the chemical methods of analysis), but simultaneously 4-5 elements in one analytical cycle within just a few minutes.

CHNS/O analyzers operate by the classical Dumas-Pregl method – burning of a sample in the presence of an oxidizer in an inert gas flow.

To ensure conversion in the reactor, catalysts are added. Analytical forms of elements – carbon dioxide (CO₂), water (H₂O), molecular nitrogen (N₂), sulfur dioxide (SO₂) are obtained at the reactor exit.

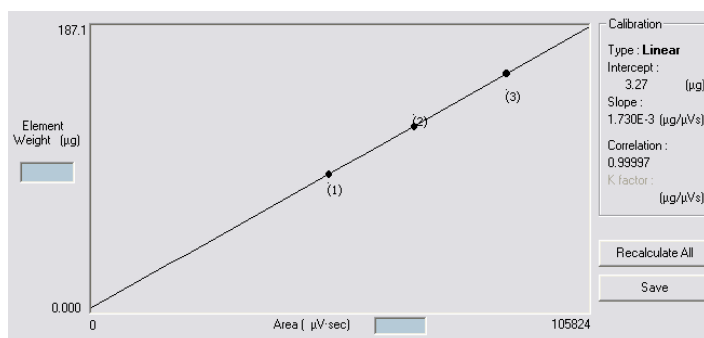


Fig. 1. Calibration curve of L-cystine.

For analyzer calibration, L-cystine (C₆H₁₂N₂O₄S₂, code E11009; EuroVector) was used. A calibration curve of L-cystine is presented in Figure 1, where coefficient of correlation is 0.99997.

In Figure 2 chromatogram of C,H,N,S elemental analysis of S-3 Me Pro is presented.

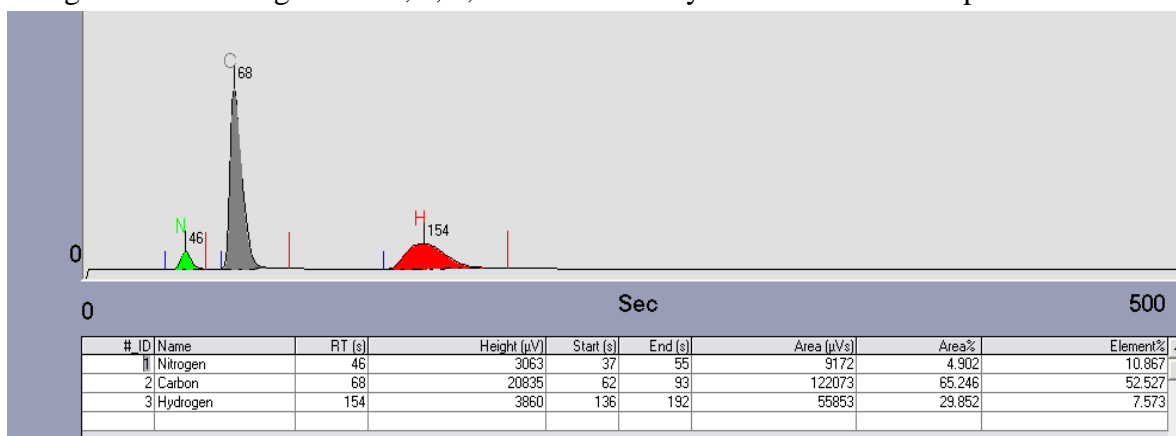


Fig. 2. Chromatogram of C,H,N,S elemental analysis of S-3 Me Pro.

References

1. Analytical Methods Committee. Evaluation of analytical instrumentation. Part XIX CHNS elemental analyzers. *Accred Qual Assur.*, 2006, vol. 11, №. 11. pp. 569–576. doi: <https://doi.org/10.1007/s00769-006-0185-x>.
2. E.A. Zaure Modern automatic CHNS / O / X analyzers of organic compounds. *Analytics and control*. 2018. vol. 22, № 1. pp. 6-19. doi: [10.15826/analitika.2018.22.1.001](https://doi.org/10.15826/analitika.2018.22.1.001)