

## Determine limits of detection LOD and limits of quantification LOQ – How To

The limits of detection (LOD) and quantification (LOQ) are evaluated using the following equations [1-4]:

LOD= $3.3 S_0/b$ LOQ= $10 S_0/b$ 

where  $S_0$  is the standard deviation of the calibration line's y-intercept where b is the slope of the linear regression line of best fit.

The limit should be subsequently validated by the analysis of a suitable number of samples known to be near or prepared at the quantitation limit.

References:

[1] Ermer, J.; Validation in pharmaceutical analysis. Part I: an integrated approach; Journal of Pharmaceutical and Biomedical Analysis, (2001); 24: 755-767.

[2] Perez-Bendito, D., Silva, M.; Kinetic Meth. in Analytical Chemisry; Chichester, Ellis Horwood, (1988), pp. 254.
[3] Mottola, H.A.; Kinetic Aspects of Analytical Chemisry; New York, Wiley, (1988), pp. 40.

[4] Thomsen, V., Schatzlein, D., Mercuro, D.; Limits of detection in spectroscopy; Spectroscopy, (2003); 18(12): 112-114.

[5] Dolan, J.W.; What's the Problem with the LLOQ? — A Case Study, LC-GC North America, 31 (11), pp. 926-931.

Printed from the Chrom Resource Center Copyright 2024, All Rights Apply **MicroSolv Technology Corporation** 9158 Industrial Blvd. NE, Leland, NC 28451 tel. (732) 380-8900, fax (910) 769-9435 Email: customers@mtc-usa.com Website: www.mtc-usa.com