Determination of LODs (limits of detection) and LOQs (limit of quantification)

LOD's may also be calculated based on the standard deviation of the response (SD) and the slope of the calibration curve (S) at levels approximating the LOD according to the formula: LOD = 3.3(SD/S). The standard deviation of the response can be determined based on the standard deviation of y-intercepts of regression lines.

The calculation method is again based on the standard deviation of the response (SD) and the slope of the calibration curve (S) according to the formula: LOQ = 10(SD/S). Again, the standard deviation of the response can be determined based on the standard deviation of y-intercepts of regression lines.

The values of SD and slope can be obtained form the LINEST function (Shown in the next figure), when creating calibration curve in the MS Excel. The SD of y is the standard deviation used for LOD and LOQ calculation.

If you are not familiar with detailed use of the LINES function, follow the document calibration curve.pdf