

Terminology

The epidemiological cut-off values calculated by the software should be referred to by the acronym CO_{WT}.

The acronyms ECOFF and ECV are reserved for epidemiological cut-off values that have been set by international agencies such as EUCAST or CLSI.

Significance of the standard deviation check

The standard deviation (SD) that appears in cell G19 is that of the normalized distribution of wild type MIC values and represents a measure of the precision of the distribution being analysed. High values for SD indicate low precision in the distribution analysed. Accurate epidemiological cut-off values cannot be derived from excessively imprecise distributions.

In this software the upper limit for HD is set at $1.18 \log_2 \mu\text{g/ml}$. This limit was derived following an analysis of 201 published MIC distributions by Smith (2022). It is applicable to data **sets obtained by single laboratories** and to aggregated **sets comprising data from multiple laboratories**. This limit is also applicable to distributions obtained at **all temperatures**. An automatic warning appears if the SD for the data being analysed exceeds this limit.

In situations where analysis of a distribution results in an SD value that exceeds or is close to this limit the distributions should be examined for the most probable source of impression. The most commonly encountered sources of imprecision are

1. Imprecision in the performance of susceptibility tests,
2. Excessive taxonomic heterogeneity in the strain set of being analysed,
3. Heterogeneity in the MIC values from the strains assumed by the analysis to be wild type stop this may occur in situations where the distribution of MIC values obtained from these strains that manifest a small reduction in susceptibility overlap significantly with distributions of MIC values manifest by fully sensitive strains.

The validity of any epidemiological cut-off values calculated from an analysis in which the SD values exceeds $1.18 \log_2 \mu\text{g/ml}$ should be treated as suspect. Such values should normally be rejected. If the context of the study requires that such a value be used it should be referred to only as a **tentative estimate** and the group of fully susceptible strains defined by its use should be referred to as a **putative WT group**