SAGEstat is a program for the statistical comparison of data in two SAGE libraries. SAGEstat can be used for evaluation and planning of SAGE analysis. The Z-test proposed by Kal and co-workers (see References) for the EVALUATION of SAGE experiments focuses on the proportions of specific tags in each library. Since these proportions can be approximated to result from sampling with replacement, the probability of the resulting tag counts follows a binomial distribution. For the sample sizes involved in SAGE this binomial distribution can be approximated as a normal distribution and a test based on the normal approximation of the binomial distribution can be used. The test statistic Z is calculated as the observed difference between proportions of specific tags in both libraries divided by the standard error of this difference when the null hypothesis is true. This Z-statistic is approximately normally distributed and can be compared to the critical Z-value for the two-sided significance level alpha. The normal approximation of the binomial distribution allows the rearrangement of the equation of the Z-test in such a way that it can be used for the PLANNING of SAGE experiments. See: Ruijter et al. 2002

FAQs

- **I tried to import a data into SAGEstat: the error message was "invalid variant type conversion".**
  This error message indicates that the program is trying to convert a text that is not a number into a number. This most often happens because: 1: you gave the wrong input range or 2: the decimal separator in Excel is different from the one in Windows. SAGEstat works with the decimal separator in Windows, so you have to set Excel to use the system separator (in Excel: options menu - international Tab in the options dialog).
- **Q**
  A

References

- Ruijter JM, Van Kampen AHC, Baas, F. Statistical evaluation of SAGE libraries: consequences for experimental design. Physiol Genomics 11: 37-44, 2002.
- Kal AJ, et al. Dynamics of gene expression revealed by comparison of serial analysis of gene expression transcript profiles from yeast grown on two different carbon sources. Mol Biol Cell. 10: 1859-72, 1999.

Version History

SAGEstat version 2014.1, December 2014

- The crash that occurred when both libraries had zero specific tags was removed. When this occurs, the resulting p-value is now set to 1, indicating no difference between the libraries for this tag.
- This change has no effect on the result of earlier analyses.

SAGEstat version 4.2, March 2012

- enabled handling of very large total library sizes

SAGEstat version 4.1, May 2011

- improved handling of decimal separator
- checks registry new version is installed

SAGEstat version 4.0, February 2003

- new release with paper in Physiological Genomics