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Methodological advances attract top cites

Research Trends Editorial Board

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Did you know?

Methodological advances attract top cites

Articles describing advances or updates in experimental methodology have long been thought to attract higher numbers of citations than other research contributions, but recent research has failed to confirm this (1).

Nevertheless, the 10 most cited journal articles in molecular life sciences solely comprised papers reporting some of the most important methodological advances of the last 40 years.

Articles in journals in the fields 'Biochemistry, Genetics and Molecular Biology', 'Immunology and Microbiology' and 'Multidisciplinary' were sorted by citations received to date (see Table 1).

Reference:

(1) Aksnes, D.W. [2006] "Citation rates and perceptions of scientific contribution", *Journal of the American Society for Information Science and Technology*, Vol. 57, No. 2, pp. 169-185.

Author(s)	Article title	Year	Journal	Cites to June 2008	Methodological advance
Laemmli U.K.	Cleavage of structural proteins during the assembly of the head of bacteriophage T4	1970	<i>Nature</i>	78810	Gel electrophoresis of proteins
Bradford M.M.	A rapid and sensitive method for the quantitation of microgram quantities of protein utilizing the principle of protein dye binding	1976	<i>Analytical Biochemistry</i>	70237	Concentration determination of proteins
Chomczynski P., Sacchi N.	Single-step method of RNA isolation by acid guanidinium thiocyanate-phenol-chloroform extraction	1987	<i>Analytical Biochemistry</i>	40031	Isolation of RNA
Thompson J.D., Higgins D.G., Gibson T.J.	CLUSTAL W: Improving the sensitivity of progressive multiple sequence alignment through sequence weighting, position-specific gap penalties and weight matrix choice	1994	<i>Nucleic Acids Research</i>	24570	Alignment of protein sequences
Altschul S.F., Gish W., Miller W., Myers E.W., Lipman D.J.	Basic local alignment search tool	1990	<i>Journal of Molecular Biology</i>	21989	Alignment of DNA sequences
Sanger F., Nicklen S., Coulson A.R.	DNA sequencing with chain-terminating inhibitors	1977	<i>Proceedings of the National Academy of Sciences of the United States of America</i>	20352	Sequencing of DNA
Towbin H., Staehelin T., Gordon J.	Electrophoretic transfer of proteins from polyacrylamide gels to nitrocellulose sheets: Procedure and some applications	1979	<i>Proceedings of the National Academy of Sciences of the United States of America</i>	18125	Transfer and detection of proteins
Saitou N., Nei M.	The neighbor-joining method: a new method for reconstructing phylogenetic trees.	1987	<i>Molecular biology and evolution</i>	15356	Construction of phylogenetic trees
Thompson J.D., Gibson T.J., Plewniak F., Jeanmougin F., Higgins D.G.	The CLUSTAL X windows interface: Flexible strategies for multiple sequence alignment aided by quality analysis tools	1997	<i>Nucleic Acids Research</i>	11840	Alignment of protein sequences
Mosmann T.	Rapid colorimetric assay for cellular growth and survival: Application to proliferation and cytotoxicity assays	1983	<i>Journal of Immunological Methods</i>	11101	Cell survival assay

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