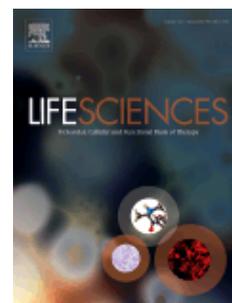




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ISSN: 0024-3205

DESCRIPTION

Life Sciences is an international journal publishing articles that emphasize the **molecular, cellular, and functional basis of therapy**. The journal emphasizes the understanding of mechanism that is relevant to all aspects of human disease and translation to patients. All articles are rigorously reviewed.

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AUDIENCE

Pharmacologists, microbiologists, toxicologists, neurobiologists, immunologists.

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[5] Cancer Research UK, Cancer statistics reports for the UK. <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/>, 2003 (accessed 13 March 2003).

Reference to a dataset:

[dataset] [6] M. Oguro, S. Imahiro, S. Saito, T. Nakashizuka, Mortality data for Japanese oak wilt disease and surrounding forest compositions, Mendeley Data, v1, 2015. <https://doi.org/10.17632/xwj98nb39r.1>.

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