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Molecular Diversity Preservation and Exploitation: World-wide Chemical Samples Collection for Bioactivity Screenings

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The National Cancer Institute, Rockville, MD, USA has successfully collected many chemical samples. These samples are used for developing drugs againast cancer. A project of collecting all chemical samples for all purposes of bioactivity studies was launched by the international organization MDPI [1] in Switzerland.

This has been supported by companies collecting chemical samples. With the development of high throughput screening technology in recent years, the acquisition of chemical samples by samples collection and combinatorial synthesis now become the bottleneck in the process of new drug discovery. The development of any pharmaceutical and agrochemical products and reesarch on any fields of life sciences require a large number of chemical samples.

It is also important for preparative or synthetic chemists. Chemists contribute not only new knowledge but also new substances. However, more than 90% of compounds recorded in literature exist only on paper; they were discarded by chemists. We are now appreciating molecular diversity. The high quality of a chemical library relies on the distinct differences of both the structures and properties of the collected samples [2]. These compounds in isolated form are traditionally and still routinely prepared in the laboratories and isolated from natural sources. Among other strategies, the first journal of organic chemistry and natural product chemistry, Molecules (visit http://www.mdpi.org/molecule/), was launched by MDPI in 1995 to encourage authors to deposit their compound samples at MDPI center in Switzerland and distribute at reasonable prices worldwide. This example has been followed by six other chemistry journals so far (http://www.mdpi.org/forum.htm). The idea [3,4] of this program is to supply both chemical information as well as the chemical substances themselves.

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References and Notes

[1] For more information, visit the http://www.mdpi.org/ website.
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