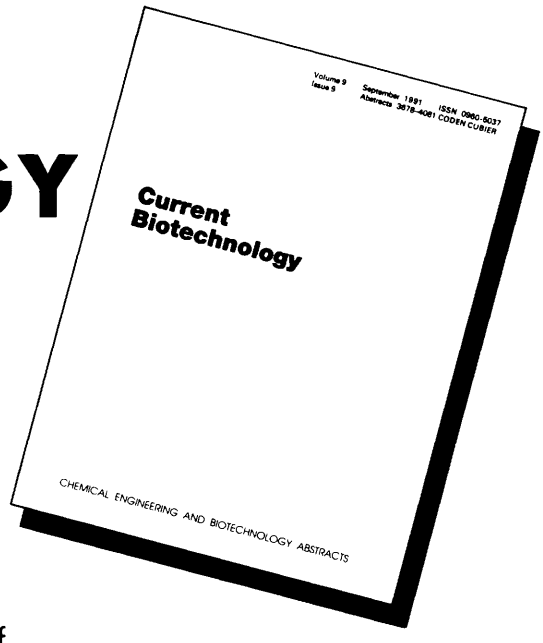
CURRENT BIOTECHNOLOGY



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CB SAMPLE

3754-92-6 **Biopharmaceuticals and conventional drugs: clinical success rates.**

In 1989, one third of new drugs clinically tested in the US were produced by biotechnology. The clinical development stage of biopharmaceuticals is compared to that of conventional drugs. Two groups of biopharmaceuticals are included: proteins derived from recombinant DNA technology and proteins derived from hybridomas. Conventional drugs are limited to new chemical entities not previously clinically tested. Success rates at clinical trials were 63–68% for recombinant DNA products, 35–48% for monoclonal antibodies and 32% for the selected group of conventional drugs.

Bienz-Tadmor, B.; Dicerbo, P. A.; Tadmor, G.; Lasagna, L. Center Study Drug Dev., Tufts Univ., Boston, MA, USA
Bio/Technology May 1992, **10**(5), 521–525.

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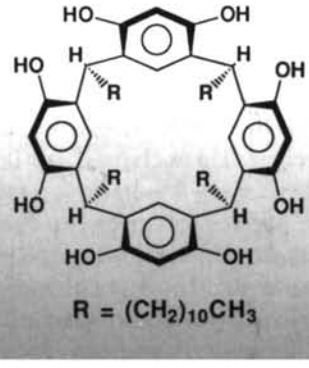
Reagent of the Year 1993

94205 calixarene C-Undecylcalix[4]resorcinarene monohydrate
package sizes 1 g and 5 g

The Prize Winner 1993:
Prof. Dr. Yasuhiro Aoyama

Y. Aoyama, born 1945, studied at Kyoto University, Japan, under the direction of the late Prof. I. Tabushi and Prof. em. Z. Yoshida. After joining the groups of Prof. Y. Murakami (Kyushu Univ.; research associate), Prof. H.Ogoshi (NUT, now Kyoto Univ.; associate professor), and Prof. T.G.Traylor (UC San Diego; associate research chemist), he became a full professor of chemistry at Nagaoka University of Technology (NUT) in 1988.



The Reagent:

C-Undecylcalix[4]resorcinarene is a macrocyclic, bowl-shaped compound having unprecedented properties. It is a lipophilic host forming stable complexes with polar oxygen-functionalized guests. By complex formation water, glycerol, carbohydrates and other polyols as well as carboxylic acids and esters are solubilized in aprotic, organic solvents[1]. The eight hydroxy groups which constitute the hydrophilic rim of the bowl-shaped compound form four independent sites for the hydrogen-bonding of guests[1]. Polyols and dicarboxylic acids undergo very selective complexation depending on the number of functional groups, their spatial arrangement and stereochemistry[2,3]. Thus carbohydrates are very selectively complexed (ribose > fructose > glucose)[4-6]. The bowl-shaped aromatic cavity leads to a considerable upfield shift of ^{1}H-NMR signals of a complexed guest[7] and to an induced circular dichroism with a chiral guest[8]. This novel host can be used as an ^{1}H-NMR-shift reagent and also as a reagent for determining the absolute configuration of a chiral guest (exciton chirality induction).

References:

[1] Y. Aoyama, Y. Tanaka, H. Ogoshi, J. Am. Chem. Soc. **110**, 634 (1988).
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He will be free of any obligations whatsoever. Nominations for the Fluka Prize "Reagent of the Year" should be submitted to the Fluka Prize Committee c/o Fluka Chemie AG, CH-9470 Buchs/Switzerland no later than September 30th. Full details regarding the Fluka Prize are available upon request.

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