although it has divested much of its diagnostics business (see "The rise and fall and rise of CBC"), it has maintained its six corporate relationships with companies that are using CBC's Stimulon adjuvants (QS-21) in vaccine development.

"The one thing that is most optimistic about the company is the strong commitment of its corporate partners," says Borho. But, he adds, the fact that SmithKline Beecham (London) and Wyeth-Lederle (Radnor, PA) have incorporated QS-21 as a central part of their vaccine programs also has a downside: "The old management made

very exclusive deals with SB and Lederle," says Borho, limiting the potential for more licensees. Nine clinical trials of vaccines incorporating QS-21 are complete, and 14 trials continue.

Aquila's own R&D programs will focus on developing the adjuvants and on human and animal vaccines. Products targeting *Streptococcus pneumoniae*, malaria, and tick-borne disease are all in preclinical studies, with clinical trials of the pneumococcal and malaria vaccines planned for this year. Aquila has synthesized a combined vaccine against Lyme disease and human granulocytic ehrli-

chiosis. In its cancer immunotherapy program, Aquila will pursue the use of QS-21 in cancer vaccines, initially to treat melanoma, adenocarcinoma, and B-cell lymphoma.

The initial capitalization of Aquila will be 5 million shares of common stock at \$9.50, a value set by the court, which gives it a market capitalization of \$47.5 million. CBC once had a market capitalization of \$300 million. Borho believes that the new valuation puts Aquila at approximately a 40–50% discount to similar stage companies with similar products and technology.

Vicki Glaser

CIBA faces a maize of committees in Europe

On August 31, Ciba-Geigy (Basel, CH) will know the fate of its genetically modified (pest-resistant) maize. By then, the crop will either be the first genetically engineered plant to be allowed to be grown and marketed in Europe, or it will be the latest victim of the complex technical and political struggle that haunts the progress of biotechnology products.

The technical objections to Ciba's maize center neither around its *Bacillus thuringiensis* toxin gene nor its herbicide glufosinate (Basta) tolerance gene (which is present as a

marker). The focus, especially in the UK, centers on an ampicillin resistance gene linked to a bacterial promoter, a construct used in initial plant transformations.

Derek Burke, chairman of the UK Advisory Committee on Novel Foods and Processes (ACNFP) which advised the UK's representatives explained that ACNFP would approve Ciba's maize for uses in which it was processed because processing would destroy any gene products. But in an animal fed unprocessed corn there remained, he said, a "low risk of transfer" of resistance to gut

bacteria in the animal and to man, and ACNFP opposed this use of the maize. Three factors made the consequences of transferring ampicillin "grave," Burke said. Firstly, the gene was linked to a bacterial rather than a plant promoter. Secondly, if the gene and bacterial promoter "looped out" of the plant genome and became autonomous, the ampicillin resistance would be on a high copy plasmid. And thirdly, ampicillin is routinely used in clinical applications.

Not everyone agrees that ampicillin resistance can be transferred in this way. Gille Morelle of Amylin (Aalst, Belgium) who has studied antibiotic resistance transfer extensively points out that digestion of cellulose in the stomach of green unprocessed material in animal feedstuffs would expose the cell contents to acids which leads to methylation and modification of the DNA to the extent that it is completely inactive. He also emphasizes that natural ampicillin resistance is not uncommon—40–60% of gut bacteria in and around animals and humans.

Ciba has been aware of the concern surrounding the ampicillin resistant gene for some time. The company's manager of issues and communication, Elke Jarchow, says "all the feedback we have is that there are no scientifically-based safety concerns. We have looked at it and brought concerns to the US regulatory authorities but they can't follow the concerns raised by the UK." Ciba's maize was approved by the US Department of Agriculture (Beltsville, MD) in August 1995. "The [ampicillin resistance] issues did come out and were examined," said Arnold Foudin, deputy director of Biotechnology, Biologics and Environmental Protection at USDA. But USDA considered there were no new risks, unusual risks or any scientific basis to believe that the product was going to increase exposure to individuals or animal systems. Foudin sees the product as "an opportunity to displace a system [of pesticide use] which may

Ciba disqualified by minority

Ciba's maize approval was defeated, at bottom, by the "qualified majority" voting system which pertains within the European Commission's regulatory committee. This system introduces a measure of democracy into decisions made at a European level. Different weights are attributed to national representatives' votes. The four most populous nations, Germany, France, the United Kingdom, and Italy, get 10 votes each. The smallest country, Luxembourg (population 405,000), gets a highly disproportionate 2.

To obtain a "qualified majority," a proposition must muster 62 out of 87 votes. The weighting and the finishing line of 62 votes are designed to retain a spread of power. No one country alone, or even two countries acting together, can block legislation if everyone else is in favor. On the other hand, at least eight nations have to be in favor for anything to get through. However, perhaps the most significant quality of qualified majority voting is that it enables opposition to be passed off as indecisiveness.

This is what happened to Ciba. The company's maize approval was defeated in the expert committee as much by the four abstentions as by the four votes against. That meant the proposal would go forward to the politicians, the Council of Ministers. Specifically, it would go before the group of 15 ministers with responsibility for the environment. The abstainers—and everyone else on the expert committee—knew that the ministers would turn the proposal down: How otherwise could they go back to their countries after their meetings in Brussels and face their respective environmental lobby groups?

It is the members of the European Parliament who meet in Strasbourg, France, however, who are the real past masters of the art of not deciding something. The parliament still has few powers. But the constitution of the European Union requires that the parliament be allowed to reach "an opinion" on most matters. Almost any decisions it takes, however, can be readily overruled by a combination of the European Commission and European Council of Ministers. The parliament's frequent tactic, therefore, is to fail to reach an opinion, to remain undecided, to not vote at all on a matter, or to keep an issue in committee stage. This has been one of the main reasons why the proposals for unifying patent biotechnology patent law across the EU have been gestating in the legislature since 1988.

John Hodgson