

Summary Statement of the Asilomar Conference on Recombinant DNA molecules

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The Asilomar conference was organized to review scientific progress in research on recombinant DNA molecules and to discuss appropriate ways to deal with the potential biohazards of this work. The danger of this technology is that it allowed the combination of genetic information from very different species. At this conference, the scientists agreed that research with recombinant DNA should proceed, but that appropriate safeguards should be outlined. They broke down the appropriate safeguards into 3 groups. The first class of safeguards were 2 types of barriers: fastidious bacterial hosts unable to survive in natural environments and nontransmissible and equally fastidious vectors. The second class of safeguards included different levels of containment ranging from low risk where all that was necessary were lab coats, through moderate risk, to high risk all labs had to be under negative pressure flow along with air-tight doors. In this second class of safeguards, special note was taken of the species from which the recombinant plasmid was created. GENERALLY, recombinant plasmids created from prokaryotes and bacteriophages were considered low risk. Plasmids created from animal viruses were considered moderate risk, and plasmids created from eukaryotes were considered high risk. Again, this generalization was devised based on the ability of the recombinant DNA to infect humans, the closer to kingdom animalia, the higher the risk. While all this is implemented, progress in creating safer vectors and hosts, emphasizing proper lab procedure and education of employees, along with constant reassessment to incorporate new knowledge will minimize the risks to the human race in the new age of hybrid DNA.