

# Recombinant Drugs

After figuring out how to grow recombinant bacteria on an industrial scale and how to harvest the insulin they produce, it was time to bring the recombinant insulin to the market. In 1982 Food and Drug Administration approved Humulin, Eli Lilly's recombinant insulin made from Genentech's specially modified bacteria. It was the first drug produced through recombinant DNA technology and among the first genetically engineered products to be available to consumers.

Following the success of Humulin, recombinant DNA technology was quickly adopted to replace older methods of producing medical products from human growth hormone to vaccines. Although scientists have since developed new biotechnology techniques, recombinant DNA still plays an important role in the production of several major medical products. Among the objects below are several of the early formulations of Humulin as well as some of the other early recombinant pharmaceuticals produced in the 1980s and 1990s.

Recombinant DNA and the Birth of Biotech

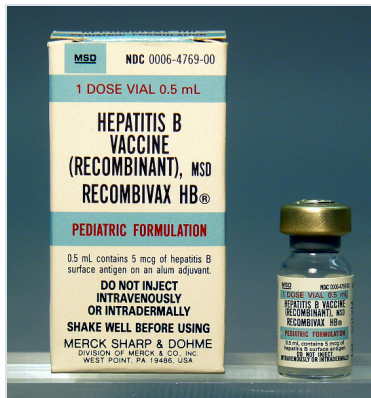
Recombinant DNA in the Lab

The Business of Biotech

Recombinant Drugs



National Museum of American History  
**Intron A; Interferon Alfa-2B Recombinant, 10 million IU**



National Museum of American History  
**Recombivax HB, Hepatitis B Vaccine (Recombinant) Pediatric**



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**Recombivax HB, Hepatitis B Vaccine (Recombinant) Adult**

Halozyme EX2008  
Merck v. Halozyme  
PGR2025-00017

Formulation, 0.5 mL

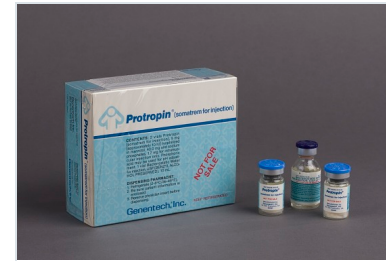
Formula, 3 mL



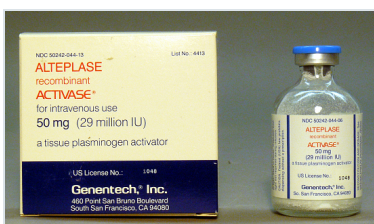
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**Roferon-A, Interferon alfa-2a recombina nt, injectable solution, 1mL**



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**Protropin**



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**Protropin; somatrem for injection**



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**Activase, 50 mg; Alteplase,**



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**Humulin N, NPH, human insulin (recombina nt DNA origin)**



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**Humulin BR, Buffered Regular, insulin**

Recombinant

ant DNA origin)  
isophane suspension

human injection, USP,  
recombinant DNA origin



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**Humulin R, Regular, insulin human injection, USP, recombinant DNA origin**



National Museum of American History  
**Humulin L, LENTE, human insulin (recombinant DNA origin) zinc suspension**



National Museum of American History  
**Glucagon Emergency Kit for Low Blood Sugar (Glucagon for Injection (rDNA origin) 1 mg)**

