

Nobel laureate predicts medical discoveries

By Karen O'Hara
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Mankind can expect a flood of medical advances toward the end of this century, possibly including cures for AIDS and cancer, a Nobel Prize-winning scientist told Santa Barbara physicians Tuesday night.

Francis Crick, a British biochemist, predicted many of the advances will be built upon the discoveries that earned him the 1962 Nobel Prize in medicine and physiology.

"The techniques are powerful and the results are promising for medical application," Crick said during a dinner at Cottage Hospital sponsored by the county Medical Society's Education Foundation.

However, the genetics researcher added, the layman's notion of cloning probably will remain more in the realm of science fiction in this century.

"What they mean is taking a gene and making 20 Einsteins," Crick said. "We don't think that's very close — and I don't see why you'd want to do that anyway."

"They can do (cloning) with a very young frog, but not with an old frog, so that's not very promising."

Crick shared the Nobel Prize with American biochemist James Watson and British biophysicist Maurice Wilkins after they deduced the structure of DNA and discovered how genetic information is encoded at the molecular level.

After winning the Nobel Prize, Crick went on to become a leader in the field of molecular biology. He now works at the Salk Institute.



Francis Crick
Noted for DNA research

DNA (deoxyribonucleic acid) is an essential building block for all living matter. The DNA molecular structure determines what offspring — be it virus, plant or person — will be like.

Watson, Crick's former research partner, wrote a book, "The Double Helix," which proved to be a controversial account of their work. Watson later studied and wrote about recombinant DNA, a "second revolution" in DNA research involving gene combinations, Crick said.

"I didn't approve of the book at first," Crick said. "I didn't want all that publicity. But it is really pretty accurate."

"Jim and I were amateurs in a

sense... We were lucky that the structure turned out to mean so much. We knew it was important, but we didn't know just how important.

"It also helped that there were two of us. When one has a bright idea and the other says it's no good, you avoid intellectual cul-de-sacs."

"As it turned out, it couldn't be simpler, but we couldn't see a solution until we had it under our noses," Crick said, in a classic example of British understatement that got chuckles from his audience. "The genetic code is almost universal."

Information involving the highly complex DNA structure is routinely used in the diagnosis and treatment of diseases.

"It allows you to take a specimen from a person and test it, rather than testing the person," said Crick, whose lecture was illustrated with technical slides. (He was the second Nobel laureate to speak in Santa Barbara in one day. South African Bishop Desmond Tutu, who won the 1984 Nobel Peace Prize, appeared earlier Tuesday at UCSB.)

One area of medical research that appears to be on the verge of rapid advancement is the diagnosis of genetic disorders in unborn children. "Much will come out when we understand what can go wrong in development," said Crick, who did his award-winning work at Cavendish Laboratory at Cambridge University in England.

In the case of infectious diseases such as AIDS (acquired immune

deficiency syndrome), Crick said that thanks to DNA research, scientists "at least know what they're up against," and that a breakthrough can be expected "in the long run."

Other areas in which Crick expects technical advancements in the next decade include gene replacement therapy — replacing a bad

gene with a good one, and treating the symptoms of aging.

He said it will take longer to make progress in his own field of neuro-biology, which explores the workings of the brain, because basic conclusions still need to be reached before DNA structural techniques can be applied.