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DHAKA TUESDAY OCTOBER 18, 1988

Three share Nobel Prize for medicine

STOCKHOLM, Oct. 17:—British Sir James Black and Americans Gertrude Elion and George Hitchings won the 1988 Nobel Medicine Prize for "important principles for drug treatment", Sweden's Karolinska Institute said today, reports Reuter.

The Institute said Black, of King's College Hospital in London, won the award for developing a beta-blocker drug called propranolol used to treat coronary disease.

Elion and Hitchings, who have worked together since 1945 at the Wellcome Research Laboratories in North Carolina, were honoured for research which paved the way to the development of cancer drugs which do not damage normal human cells.

This year's prize is worth 2.5 million crowns (400,000 dollars).

The citation said: "The discoveries awarded with this year's Nobel Prize... concern the development of

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new drugs which have become essential in the treatment of a number of different disorders".

These included leukemia, gout, hypertension, ulcers, angina pectoris and infectious diseases.

"While drug development earlier mainly had been built on chemical modification of natural products, they introduced a more rational approach based on the understanding of basic biochemical and physiological processes" the citation said.

Black, 64, was the first to realise how beta-blocking drugs might be used to treat cardiac disease by decreasing the oxygen supply to the heart, reducing its workload.

In 1962, his team developed the first clinically-useful beta-blocker pronethalol, following it with propranolol in 1964.

Drugs based on this principle are widely used today and have also been found to be effective in treating high blood pressure.

Elion, 70, and Hitchings, 83, studied the difference in nucleic acid

metabolism between healthy and cancerous cells, looking for ways to block selectively the growth of cancer cells and noxious organisms.

"Over the years, this research philosophy has formed the basis for the development of drugs against a variety of disorders including leukemia, malaria, virus infections and gout", the Institute said.

By the early 1950s, they had achieved their first breakthrough with a drug called 6-mercaptopurine, which caused one-third of leukemia patients in a study to go into complete remission. The drug is still used today.

A variant of its was for years the only drug available to prevent rejection of transplanted organs.

More recently, Elion and Hitchings helped develop acyclovire, used in the treatment of infections with herpes virus. This later led to the development of AZT (Azidothymidine) by their colleagues at the Wellcome Institute. AZT is the most effective treatment yet developed against AIDS considerably delaying the effects of the killer-virus.