Interferon
Properties, Mode of Action, Production, Clinical Application

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Properties, Mode of Action, Production, Clinical Application

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Drug Dosage
The author and publisher have exerted every effort to ensure that drug selection and dosage set forth in this text are in accord with current recommendations and practice at the time of publication. However, in view of ongoing research, changes in government regulations, and the constant flow of information relating to drug therapy and drug reactions, the reader is urged to check the package insert for each drug for any change in indications and dosage and for added warnings and precautions. This is particularly important when the recommended agent is a new and/or infrequently employed drug.

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Preface

The Deutsche Krebshilfe was founded by Dr. Mildred Scheel as a private foundation. The reaction and response of the German people to this foundation, which is dedicated to finding solutions for this urgent medical problem, has been very great. The Deutsche Krebshilfe received, throughout the years, money from individual private donors, legacies, and many other sources. The enthusiastic donations by the population have never ceased since the start of the foundation and continue in a way which gives reason to admire the goodwill of the people.

However, in regard to this money donated to the Deutsche Krebshilfe, there are, of course, great demands placed upon these persons, particularly on Dr. Scheel and her scientific and organizational advisors, and suggestions on how to make the best use of these donations. The people expect, of course, this money to be given to the discovery of solutions to the most urgent problems in the medical care of cancer and to the most fruitful projects in cancer research. In regard to this challenge, the Deutsche Krebshilfe always followed one main goal, that is the idea that a private foundation should always be innovative. It should always start and support projects which are
new, which cannot be started because of the lack of official initiative, or because of the lack of official financial support, or because there are administrative barriers which inhibit or retard the tackling of urgent projects. These goals, however, require the persistent efforts and the expertise of those who are asked to advise the Deutsche Krebshilfe. In addition, since the cancer problem is international and the fight against cancer needs a combined international effort, a comprehensive, world-wide group of experts is needed. The Deutsche Krebshilfe always sought the advice of international experts in order to help the foundation work best for the benefit of the cancer patients of today and tomorrow.

The meetings of experts, of which this was the third one, are examples for the international and comprehensive discussions on the aims and tasks of the Deutsche Krebshilfe. The idea to devote this meeting to interferon is Dr. Scheel’s because she was frequently approached by patients to supply the financial means for individual interferon therapies. Since the interferon problem is, at present, extensively discussed within the community of scientists as well as the laypress, Dr. Scheel again sought the advice of internationally recognized experts in this field. She expects, from the results of this meeting, the best possible clarification and an expert evaluation of the significance of interferon therapy, particularly in comparison with other forms of cancer treatment. During the past year, the interferon field has exploded scientifically. Some of the dynamite workers involved were at this meeting.

The reasons for the enormous progress in interferon research have been basically threefold;
First, there have been breakthroughs in the protein chemistry and the molecular biology of interferon. Thus, it is now proven that interferons are a class of different proteins, and the amino acid sequence of some has been identified.

We want to stress the following: Interferons are a group of defined proteins with exceedingly high biologic activities in different systems.
Secondly, it has been possible to introduce and express the gene of human interferon in E.coli. This may be a promising way towards producing interferon in sufficient quantities. Most excitingly, the E. coli product seems to share many of the known properties of human
interferon.
Thirdly, there has been a tremendous clinical interest in interferon
due to the possibility that interferon may be of some use in the
treatment of neoplastic disease.
Please note that we have used the term may. It was obviously one
of the purposes of this meeting to achieve a critical evaluation of the
available clinical data.

Preface IX

When a research field explodes, as it has happened to interferon
research, people working in the field may have a twofold reaction,
and this applies to those who have worked in the field for ten or more
years, particularly our distinguished guests.
On the one side, it is a good feeling to realize that the scientific
community finally acknowledges the importance of something of
which we have been convinced for quite a while.
On the other side, one is afraid when there is too much uncritical
enthusiasm, particularly when something as serious as the treatment
of cancer is involved and when the lay-press begins to be interested.
Now, in this situation, we feel that we owe the public clear-cut
statements about the state of affairs. Dr. Scheel is very concerned
about these matters.
As it has happened often in cancer medicine, so-called new forms
of therapy have raised much optimism, then failed, and subsequently
seriously blocked future developments. In such situations, short-cuts
to practical medicine have turned out to be disasters.
All of us are convinced that interferons are of tremendous biologic
significance. Interferons may turn out to be of clinical value but we
are far from having a sound evaluation on this point. We want to
stress, however, that most likely no progress will be made unless the
way is paved by thorough research in the laboratories. Clinical application
of interferons would probably have never occurred if scientists
did not treat mice with interferons about ten years ago. Similarly, we
believe that future therapeutic improvements will depend on the
progress made in laboratories. Furthermore, in regard to clinical
studies, the very least we have to postulate is that therapeutical trials
are accompanied by thorough clinical investigations so that we may
learn more about the pharmacokinetics of interferons and many
other things. Otherwise, the therapeutic trials may turn out to be useless
and extremely costly.
The editors acknowledge the competent assistance of Ms. Marion
Kasamasch.

Heidelberg, 1981

Klaus Munk

Holger Kirchner