DO SUBSTANCES INHIBITING TUMOR GROWTH
EXERT A RETARDING INFLUENCE ON THE
REGENERATION OF THE SKIN?*

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In a series of studies carried out in this laboratory the effect
of various substances on tumor growth has been determined. Sev-
eral substances, especially colloidal copper, hirudin, nucleoprotein,
and casein were found to be active.

In order to contribute to the understanding of the mechanism of
these substances, it was considered of interest to study their influ-
ence on other processes besides tumor growth, and at Dr. Loeb's
suggestion I studied the effect of these substances on wound healing
in the mouse.

The problem that I undertook was to determine if possible whether
any change, macroscopic or microscopic, could be produced through
the intravenous injection of these substances in a wound in the
process of healing.

The technique adopted consisted in excising in each experiment a
small piece of skin from the back of each of eight mice, care being
taken to make excisions of about the same size. At first the
wounds were protected by a colloidin dressing, but later this was
omitted as the wounds seemed to heal better without this covering;
and when the mice were kept in separate boxes no noticeable infec-
tion followed and the wound healed normally.

On the third day after the wound was made, four of the mice
were injected through the vein of the tail with the substance to be
tested, and injections were repeated on four successive days. The
mice were killed on the eighth day and the wound with the sur-
rounding skin was excised for microscopic study.

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The four control mice were either not injected at all or were injected intravenously with normal salt solution or distilled water. They were also killed on the eighth day and the wound with its surrounding skin was excised for microscopic study.

When a mouse died or was killed by the injection at an earlier date, the wound was excised and at the same time a control animal was killed and its wound excised for study.

Altogether twelve experiments were carried out with the four substances active in the case of mouse tumors. The wounds which were excised on the eighth day showed no difference macroscopically. Microscopically it was found that the regeneration of the epithelium, as well as of the connective tissue and blood vessels, was approximately the same in control mice, and in the mice injected with the various substances. We may therefore conclude that none of the substances mentioned has a noticeable influence on wound healing.

CONCLUSIONS.

Repeated injections of colloidal copper, hirudin, nucleoprotein, and casein, which have a definite retarding influence on tumor growth, given to mice during the process of wound healing do not produce any noticeable influence on the course of regeneration.