phate buffer. Chitosan gel base (2%) was prepared by
dispersing chitosan in 1% lactic acid. Liposome suspension
was then blended homogeneously with chitosan gel. This
mixture was poured into glass cells. Glass cells were incu-
bated at 37°C and 1 ml of solution was removed at various
time points. Released 5-FU was determined spectrophoto-
metrically at 266 nm.

The release of liposomal 5-FU from the chitosan gel
followed a time relationship with about 40% of 5-FU
being released from the chitosan matrix in 24 h. In the
same period, about 80% of 5-FU being released from the
matrix.

PO-87 THE EFFECT OF RHEOLOGICAL BEHAVIOR
OF THE FORMULATION ON THE RELEASE AND
PERMEATION RATE OF THE ACTIVE SUBSTANCE
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The objective of this study is to investigate how different
types of polymers at different concentrations affect the
release and permeation rate of the active substance through
synthetic membrane and intact skin, respectively.

A submicron o/w emulsion containing a local anesthetic
substance, was investigated in presence and absence of
different polymers, CMC, Carbopol 934P, PEG400 or
PEG4000. Various concentrations of the polymers were
used in order to produce different rheological behavior.
The amount of drug, which passes through the membrane,
was measured as a function of time, using static diffusion
cells with either Silastic® sheeting 500-1 or guinea pig skin
as membrane. The emulsion without polymer was used as
reference. Rheological measurements were performed
giving the viscosity and yield value of the formulations.
Finally, theoretical values for diffusion coefficient and dif-
fusion pathways were estimated and compared with the
experimental data to discuss different diffusion models.

Rheological behavior of the formulation, other than
Newtonian, affected the release rate of the drug signifi-
cantly. Topical formulations require a certain consistency
in order to result in good patient compliance. Theoretical
estimation indicates that in order for a topical formulation
to stay in place, a yield value of about 50 Pa is necessary when
it is applied as a 5 mm thick layer. On the other hand, yield
values ≥40 mPa are sufficient to prevent convectional
movement of the droplets in the emulsion, and thus,
decrease the release rate of the active substance. The
permeation rate of the drug was not affected in the same
level by the rheological behavior of the formulation.
However, a significant decrease in permeation rate was
measured at viscosity ranges suitable for topical administra-
tion. This may of course be a limitation where a fast onset
of action is required.

PO-88 TEICOPALIN A GLYCOPEPTIDE
ANTIBIOTIC: STABILITY AND MICROBIOLOGICAL
EVALUATION
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Teicoplanin is a recently introduced glycopeptide anti-
biotic used for the treatment of a variety of aerobic and
anaerobic Gram positive infections. As the development
of a biodegradable and implantable delivery system contain-
ing teicoplanin for the localized treatment of osteomyelitis
which is an inflammatory bone disease was the aim, the
stability of the antibiotic should be maintained during the
implantation period. Advantages of localized biodegradable
therapy can be stated as high local antibiotic concentration
at the site of infection as well as preventing the need of the
removal of the implant after the treatment. Therefore, in this
study, the stability of teicoplanin was investigated by a
short-term stability test. For this purpose, accelerated stabi-
licity studies for a six month period were performed. During
the stability studies, the temperature was kept at 40 ± 2°C
and the relative humidity was 75 ± 5%.

Antibacterial activity of the samples was determined by
broth microdilution method according to the National
Committee for Clinical Laboratory Standards. Staphylococ-
cus aureus ATCC 25923 was used as a reference strain.
Results were expressed as minimal inhibitory concentration
(MIC, µg/ml) values. To determine the growth inhibition
zones of the samples, agar diffusion method was used. The
samples were pipetted into the wells cut in the agar plates.
The diameters of the inhibition zones were measured in
millimetres.

At the end of the 3rd month of the study, 93.10% of the
activity of teicoplanin was determined to be lost. An
increase in MIC values was observed due to the time begin-
ing at the 6th week.

PO-89 EFFECTS OF STORAGE CONDITIONS ON THE
PHYSICAL AGING OF POLYVINYLPYRROLIDONE:
COMPARISON OF ENTHALPY RELAXATION AND
POSITRON LIFETIME DATA WITH THE TENSILE
STRENGTH OF TABLETS
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Physical aging in polymeric systems is the term used to
describe the time dependency of changes in the behaviour of
an amorphous polymer held at temperatures below the glass
transition. Volume relaxation and enthalpy relaxation are