

Characterizing Interactions of Chemical Penetration Enhancers with Skin

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Transdermal Drug Delivery

● Chemical Penetration Enhancers (CPEs)

- High molecular weight drug molecules
- Specific types of molecules (proteins and peptides)

● Goals:

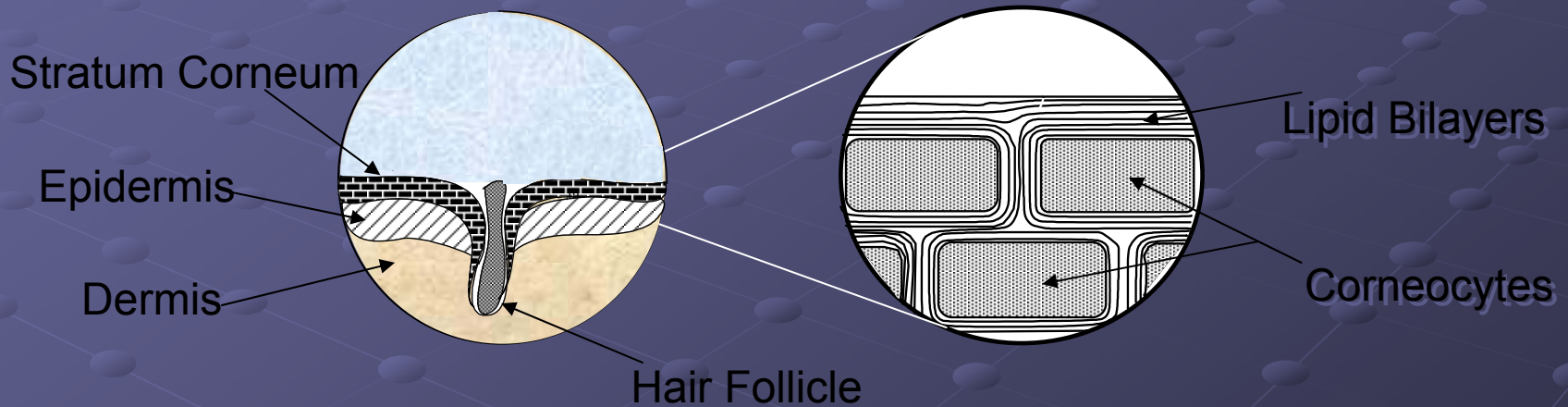
- Potency
- Safety

● Major Benefits

- Painless
- Controlled and prolonged
- Bypasses many problems with using pills and injections

Understanding the Chemistry

- Quantifying the effects of CPEs on stratum corneum



● *In vitro:*

Stratum corneum (SC) of porcine skin

Fourier Transform Infra Red Spectroscopy (FTIR)

1

Isolate stratum corneum



2

FTIR at time zero



3

Soak & rinse

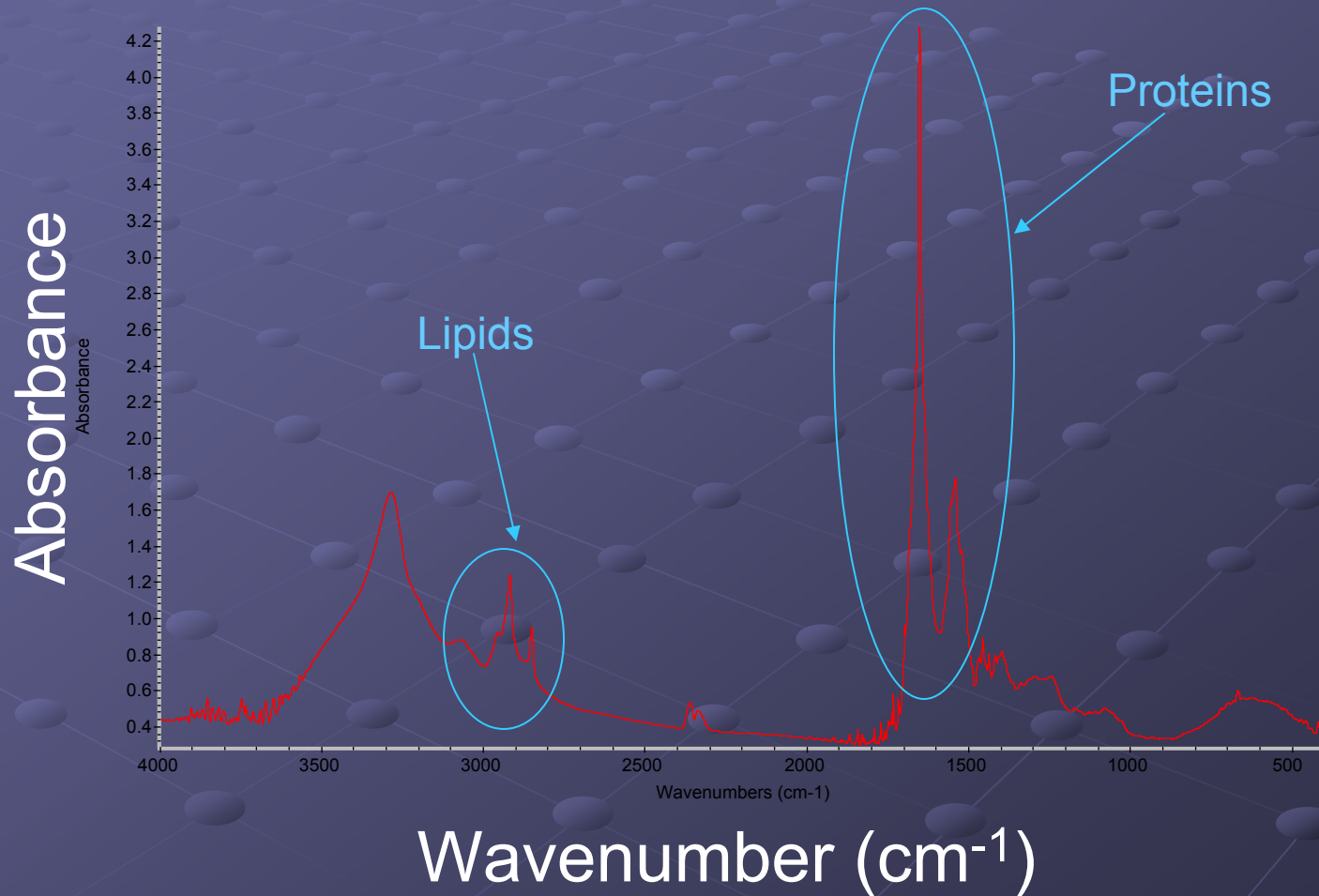


4

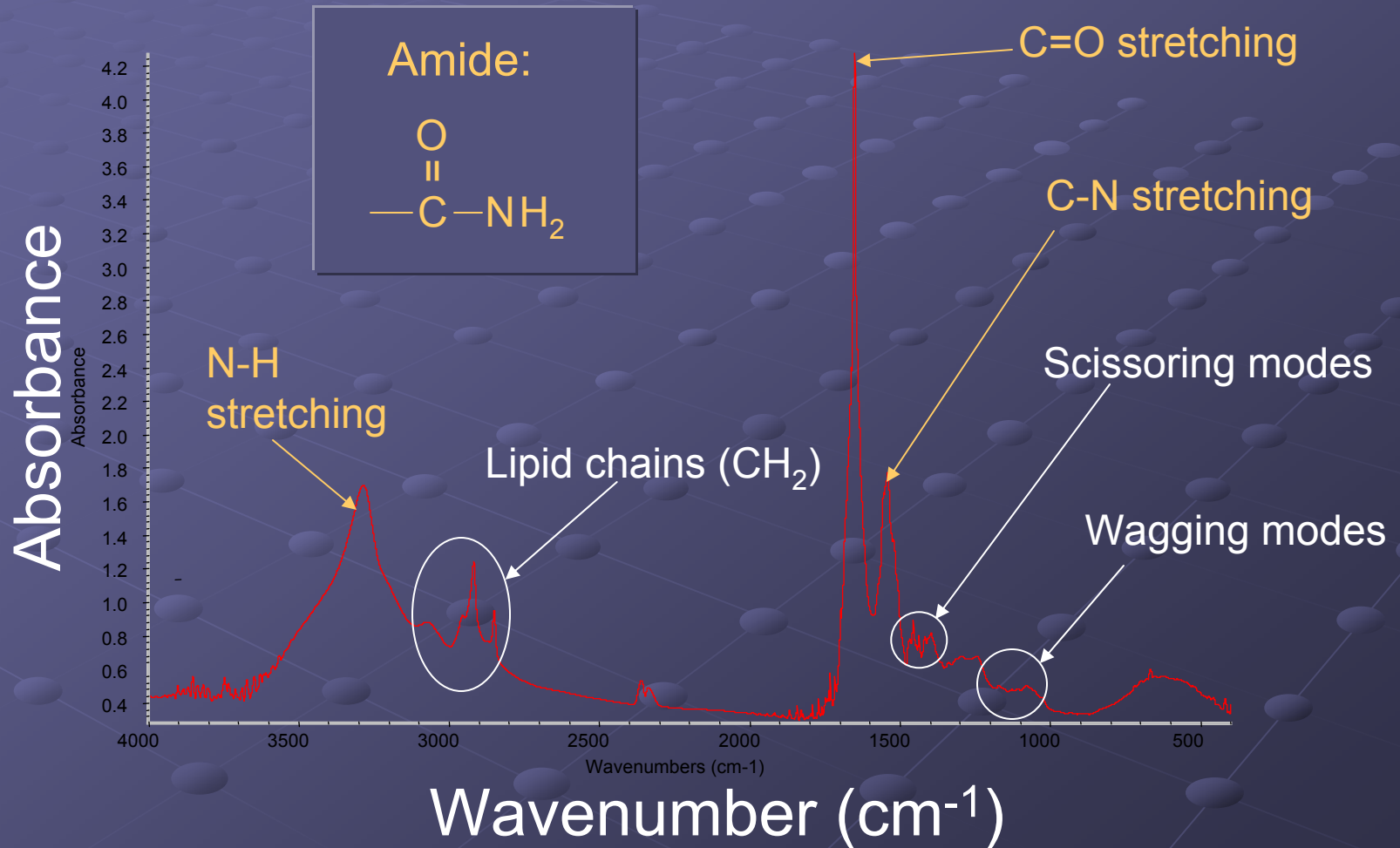
FTIR at 24 hr



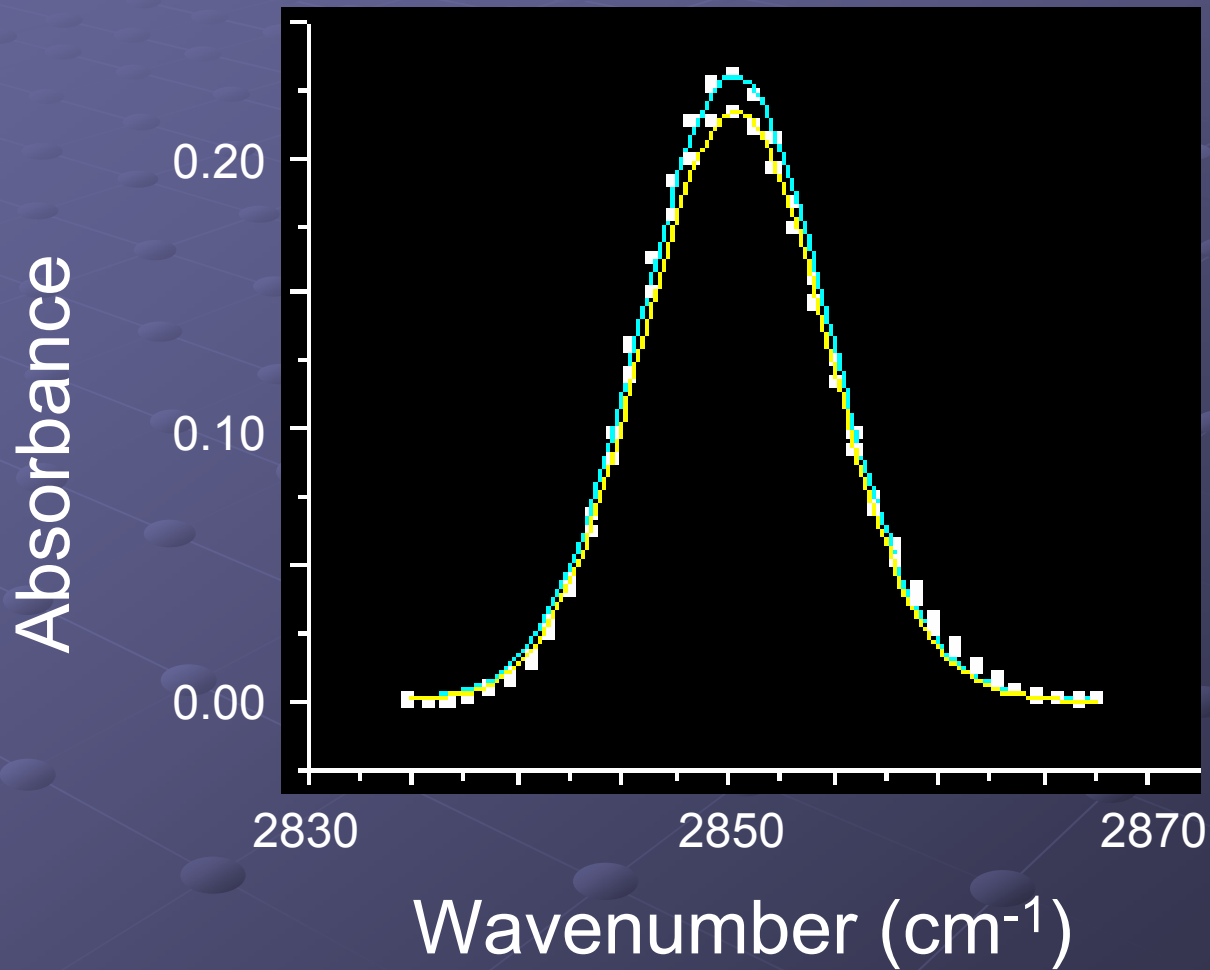
FTIR Spectrum of Porcine SC



FTIR Spectrum of Porcine SC



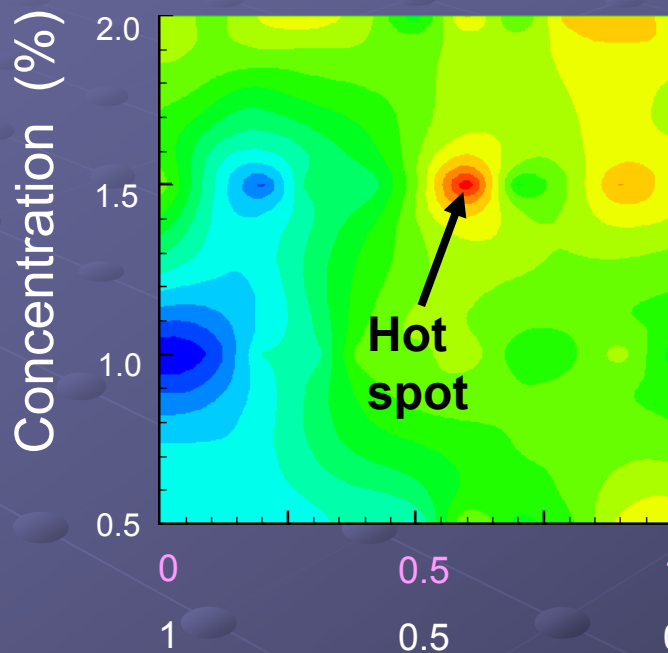
Change in Peak Area



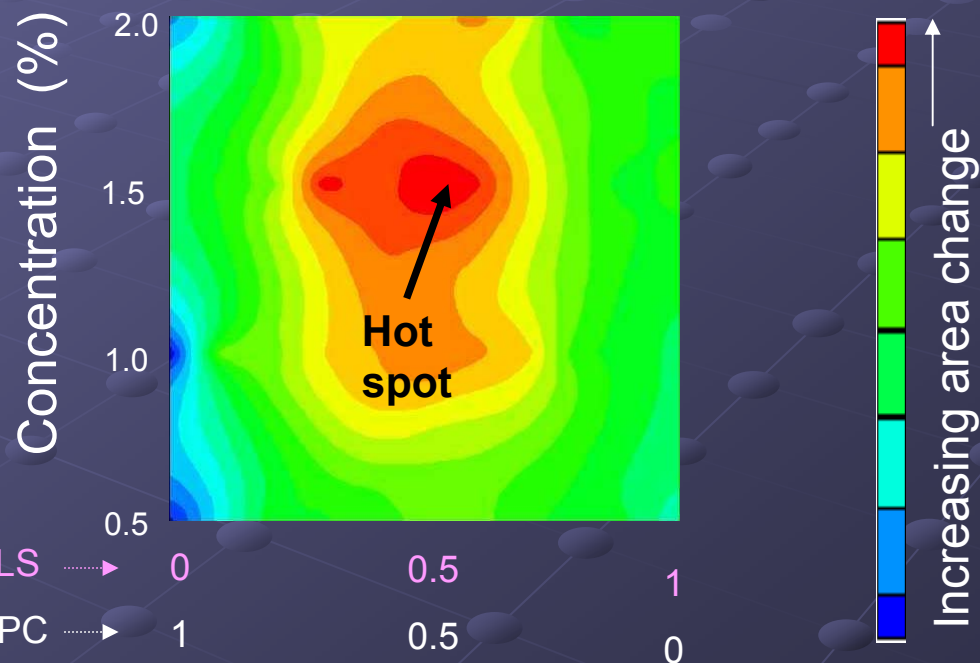
SLS:DPC Phase Map

2850 cm^{-1} peak

FTIR



Conductivity



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