In the last few years the interest to terahertz radiation usage in biology and medicine for the tumor diagnostics has increased significantly. But the primary problem of its practical application is the strong absorbance by tissue water. One of the solutions of the problem is application of dehydrating agents which allows removing partly free (bulk) water from the target tissue.

Goal of the study is to take the transmission spectra of dehydrating agents and distilled water in THz range and to compare the transmission spectra of healthy and tumor skin under the action of OCAs in THz range.

**Materials and methods**

- **EXPERIMENTAL SETUP**
  Infrared Fourier spectrometer Nicolet 6700

- **TESTED SPECIMENS**
  *In vitro* rat healthy skin and model tumors (cholangiocarcinoma transplanted under the skin)

- **INVESTIGATED FREQUENCY REGION**
  15-30 THz

- **AGENTS**
  - Glycerol dehydrated (100%), n=1.469
  - Water glucose solutions (30%, 40%, 50%), n=1.379, 1.391, 1.412, respectively
  - PEG-600 (100%), n=1.464
  - Propylene glycol (PG), n=1.428
  - Distilled water, n=1.333

- **SPECTRA**
  The experimental Fourier Total Internal Reflection (FTIR) spectra presented as the dependence of the optical density \( D \) on the wavenumber were recalculated to the transmittance spectra with Omnic software with known relation that connects the transmission coefficient \( T \) with the optical density \( D \): \( T = 10^{-D} \)

**Motivation**

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