

Title (en)
DEVICE FOR DETERMINING THE CONCENTRATION OF SUBSTANCES IN THE BLOOD

Title (de)
VORRICHTUNG ZUM BESTIMMEN DER KONZENTRATION VON STOFFEN IM BLUT

Title (fr)
DISPOSITIF POUR LA DETERMINATION DE LA CONCENTRATION DE SUBSTANCES DANS LE SANG

Publication
EP 0711124 A1 19960515 (DE)

Application
EP 94925412 A 19940728

Priority
• DE 4325529 A 19930729
• EP 9402507 W 19940728

Abstract (en)
[origin: WO9503736A1] A device is proposed for determining the concentration of substances in the blood, in particular of haemoglobin, oxyhaemoglobin and/or diagnostic dyes. A light source (12, 30, 40) emits light in the range of at least one wavelength, the light being made to pass via an optical coupler (50) and an optical waveguide connected thereto in the blood. Light emerging from the blood passes through the coupler (50) to a photodetector (60, 70), whose output signal passes through an evaluation device which determines the required concentration on the basis of the intensity of the light leaving the blood. The photodetector detects light in the range of at least two light wavelengths, one of which corresponds to the wavelength of the fluorescent light from the substance whose concentration is to be measured, the other corresponding to the wavelength of the fluorescent light from at least one other substance present in the blood. The range of the wavelength of light from the light source (30, 40) is spectrally separated from those of the light detected by the light detector (70, 60). The evaluation device calculates the required concentration of the substance in the blood on the basis of an empirically predetermined function into which are incorporated the respective intensities of fluorescent light from the substance to be measured and of the at least one other substance, in particular according to a multidimensional power series of those intensities.

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