Title (en)

METHOD AND DEVICE FOR THE NON-INVASIVE TRANSCUTANEAN DETERMINATION OF THE CONCENTRATIONS OF SUBSTANCES IN HUMAN BODY FLUIDS OR TISSUES.

Title (de)

VERFAHREN UND ANORDNUNG ZUR NICHTINVASIVEN, TRANSKUTANEN BESTIMMUNG VON STOFFKONZENTRATIONEN IN KÖRPERFLÜSSIGKEIT ODER GEWEBE DES MENSCHEN.

Title (fr)

PROCEDE ET DISPOSITIF DE DETERMINATION PERCUTANEE NON INVASIVE DE LA CONCENTRATION DE SUBSTANCES PRESENTES DANS DES LIQUIDES OU DES TISSUS DU CORPS HUMAIN.

Publication

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Application

EP 94929519 A 19941007

Priority

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Abstract (en)

[origin: WO9513739A1] The aim of the invention is to provide a method and device for the non-invasive transcutaneous determination of the concentrations of substances in the human body, the method being unaffected by person-dependent interference variables, and the dominance of water absorption, as well as the effect of blood circulation through the tissues, being reduced. This aim is achieved by irradiating (1, 2) a suitable area of the skin with broad-band radiation, by recording the transmission or reflection spectrum (3, 4, 6), by making a series of intensity measurements at suitably spaced intervals (12) over this spectrum and by processing the series of intensity measurements using an artificial neuronal network (13). The neuronal network (13) is taught, in a teaching phase, with a multiplicity of intensity-measurement series and simultaneously invasively obtained concentration values in order to generate weight matrices. The invention is suitable for use in the non-invasive determination of the concentrations of substances in human blood, e.g. haemoglobin, bilirubin, glucose, albumin, urea, cholesterol and other metabolic products.

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IPC 8 full level

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