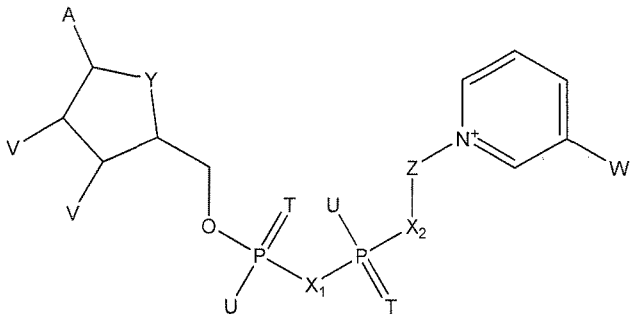
Z = a residue comprising a cyclic group with 5 C atoms which optionally contains a heteroatom selected from O, S and N and optionally one or more substituents, and a residue $CR4_2$ wherein $CR4_2$ is bound to the cyclic group and to X2, and

where R4 = in each case independently denotes H, F, Cl, or CH_3, provided that Z and the pyridine residue are not linked by a glycosidic bond,

or a salt or optionally a reduced form thereof.

In still another further embodiment, the test strip is configured for electrochemical determination of the first and second analytes.

In another aspect, there is provided a method for determining first and second analytes in a sample, comprising the steps of: providing a test element as defined herein; contacting the test element with the sample; detecting the first analyte; and detecting the second analyte, wherein the first analyte is hydroxybutyrate and the second analyte is glucose. In yet another embodiment, a method for determining first and second analytes in a sample includes providing a test element configured for determining first and second analytes and that includes a first coenzyme-dependent enzyme or a substrate for the first enzyme, a second coenzyme-dependent enzyme or a substrate for the second enzyme, and a coenzyme selected from the group consisting of thio-NAD, thio-NADP, and a compound according to formula (I):



(I)

in which

A = adenine or an analog thereof,

T = in each case independently denotes O or S,

U = in each case independently denotes OH, SH, BH_3^-, or $BCNH_2^-$,

V = in each case independently denotes OH or a phosphate group,

W = COOR, $CON(R)_2$, COR, or $CSN(R)_2$ in which R in each case independently denotes H or C_1-C_2-alkyl,

X_1, X_2 = in each case independently denote O, CH_2, $CHCH_3$, $C(CH_3)_2$, NH, or NCH_3,

Y = NH, S, O, or CH_2,

21. A method for determining first and second analytes in a sample, comprising the steps of:

providing a test element according to any of claims claim 1 to 11 or 16 to 20;

contacting the test element with the sample;

detecting the first analyte; and

detecting the second analyte,

wherein the first analyte is hydroxybutyrate and the second analyte is glucose.

~~22. The method of claim 21, wherein the first analyte is hydroxybutyrate and the second analyte is glucose.~~

~~23~~22. The method of claim 21 ~~or 22~~, wherein the steps of detecting the first analyte and detecting the second analyte are performed simultaneously.

~~24~~23. The method of ~~any of~~ claims 21 ~~to 23~~or 22, wherein the steps of detecting the first analyte and detecting the second analyte are completed within five seconds after contacting the test element with the sample.

~~25~~24. A method, comprising:

providing a test element acording to any of the claims 1 to 11 or 16 to 20 configured for determining glucose and ketone values in a sample;

contacting the test element with the sample; and

determining the glucose and ketone values in the sample within 7.5 seconds after contacting the test element with the sample.

~~26~~25. The method of claim ~~25~~24, wherein the test element includes a first reagent material for determining the glucose value and a second reagent material for determining the ketone value.

~~27~~26. The method of claim ~~26~~25, wherein the second reagent material includes a hydroxybutyrate dehydrogenase.

~~28~~27. The method of any of claims ~~25~~ 24 to ~~27~~26, wherein the step of determining glucose and ketone values in the sample is completed within 5 seconds after contacting the test element with the sample.

~~29~~28. The method of any of claims ~~25~~ 24 to ~~28~~27, wherein the glucose and ketone values are determined within 2 seconds of one another during the determining step.

~~30~~29. The method of any of claims ~~25~~ 24 to ~~29~~28, wherein the sample comprises blood.

~~31~~30. The test element of claim 8, wherein the second reagent material further comprises FAD, NAD or NADP.