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Title: Label free bio image sensor for real time monitoring of potassium ion released from hippocampal slices

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1 **Label free bio image sensor for real time monitoring of potassium ion released from**
2 **hippocampal slices**

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11 Keywords: CMOS biosensor, potassium ion image sensor, PVC membrane, Label free
12 detection, Hippocampus

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14 Highlights

15 K⁺ image sensor was developed using a PVC membrane coated on a 128 x 128 pixels CCD
16 pH image sensor.

17

18 The sensitivity was 50 mV/decade for a K⁺ concentration of 10⁻³ to 10⁻¹ M.

19

20 Glutamate-induced changes in the K⁺ were recorded in the hippocampal slices.

21

22 The imaging of K⁺ release from hippocampal neurons was demonstrated without labeling.

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