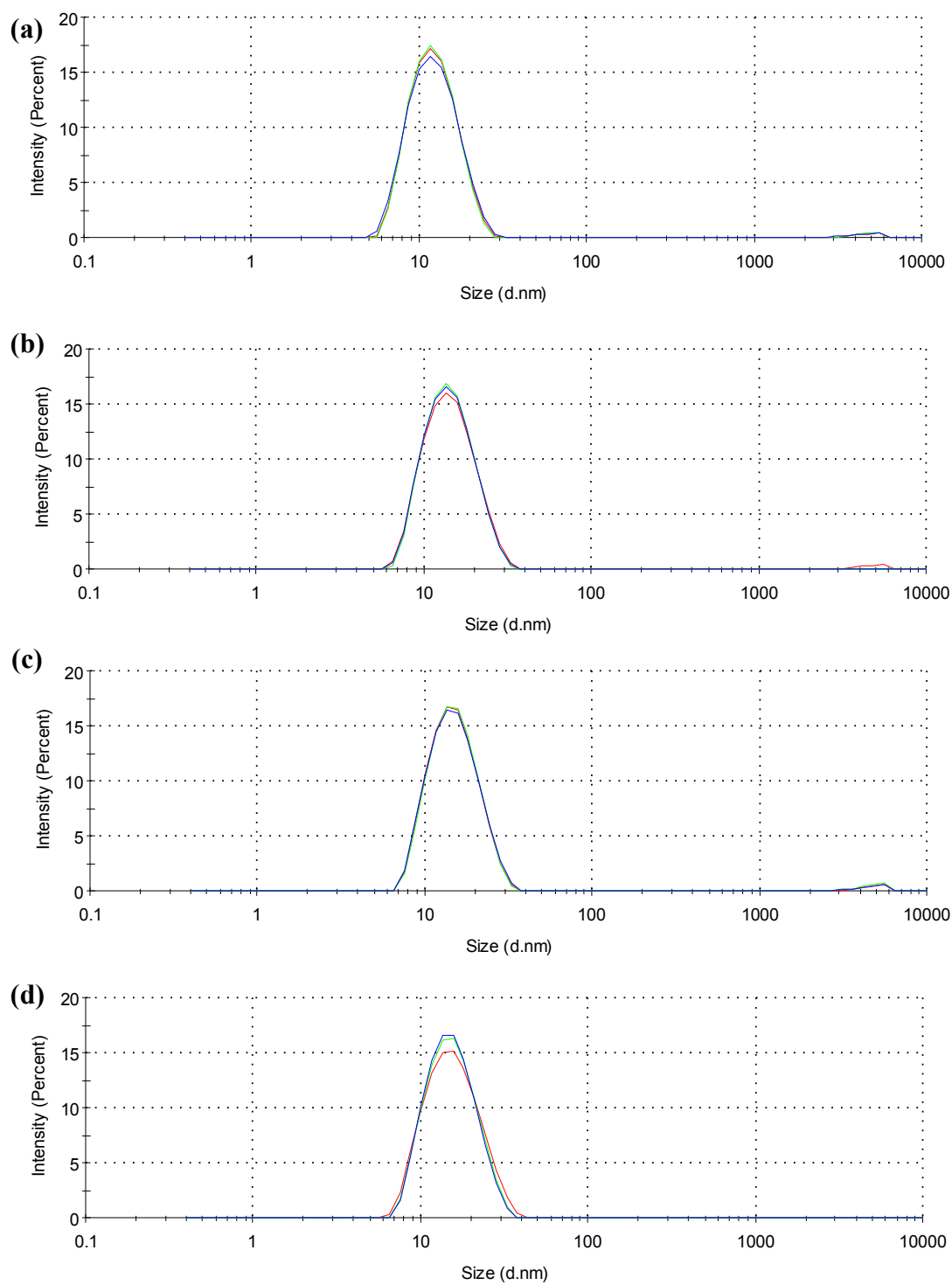


## **Analytical and Bioanalytical Chemistry**

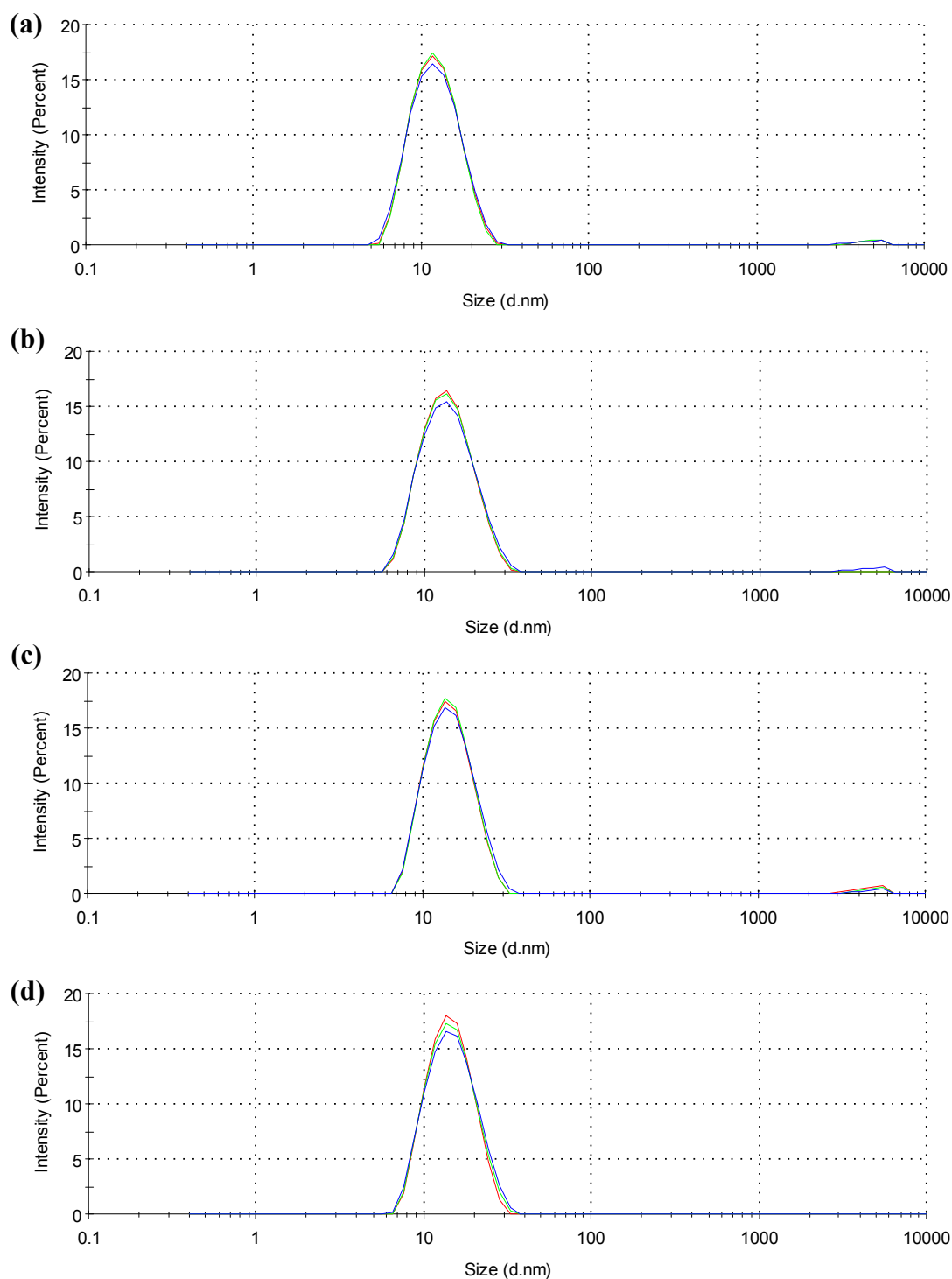
### **Electronic Supplementary Material**

#### **The influence of pH and divalent/monovalent cations on the internal electron transfer (IET), enzymatic activity and structure of fructose dehydrogenase**

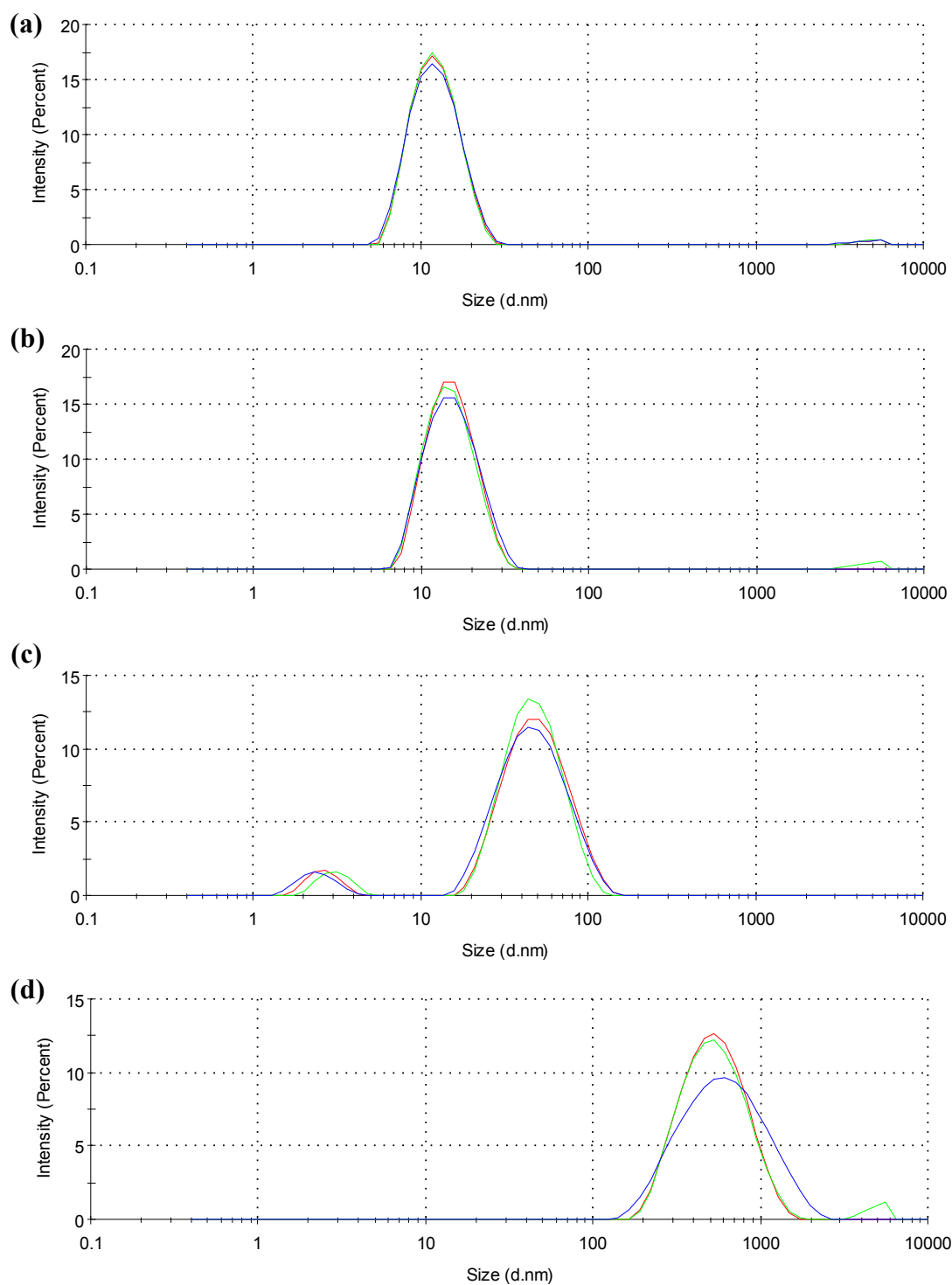
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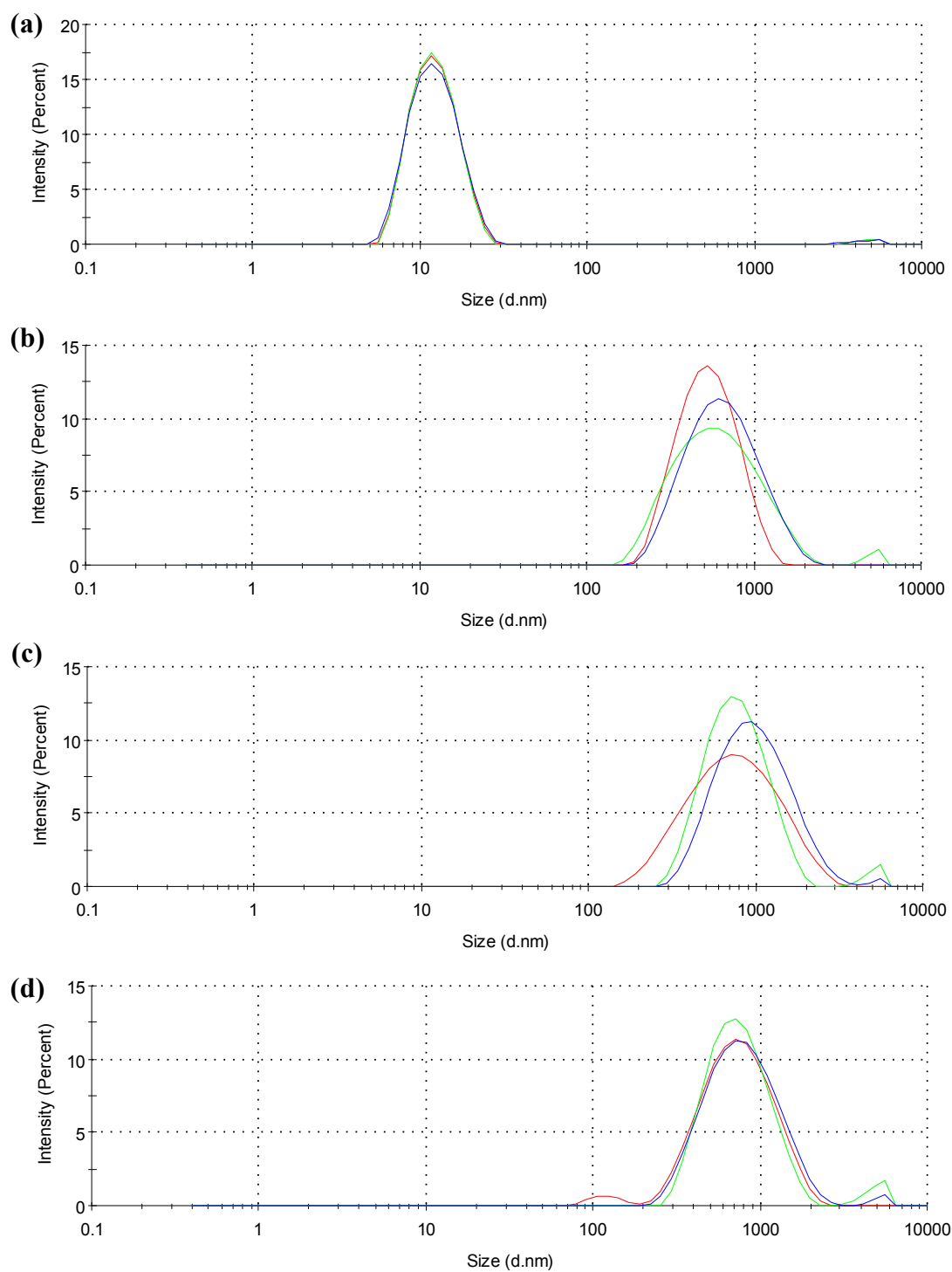
**Fig. S1** DLS measurements performed with a  $0.15 \text{ mg mL}^{-1}$  solution of fructose dehydrogenase (FDH) from *Gluconobacter japonicus* in 10 mM  $\text{NaH}_2\text{PO}_4$  pH 4.5 (3 repetitions, 12 runs) at different NaCl concentrations: 0 mM (a), 10 mM (b), 50 mM (c) and 100 mM (d)



**Fig. S2** DLS measurements performed with a  $0.15 \text{ mg mL}^{-1}$  solution of fructose dehydrogenase (FDH) from *Gluconobacter japonicus* in  $10 \text{ mM NaH}_2\text{PO}_4$  pH 4.5 (3 repetitions, 12 runs) at different KCl concentrations: 0 mM (a), 10 mM (b), 50 mM (c) and 100 mM (d)



**Fig. S3** DLS measurements performed with a 0.15 mg mL<sup>-1</sup> solution of fructose dehydrogenase (FDH) from *Gluconobacter japonicus* in 10 mM NaH<sub>2</sub>PO<sub>4</sub> pH 4.5 (3 repetitions, 12 runs) at different CaCl<sub>2</sub> concentrations: 0 mM (a), 10 mM (b), 50 mM (c) and 100 mM (d)



**Fig. S4** DLS measurements performed with a  $0.15 \text{ mg mL}^{-1}$  solution of fructose dehydrogenase (FDH) from *Gluconobacter japonicus* in  $10 \text{ mM NaH}_2\text{PO}_4$  pH 4.5 (3 repetitions, 12 runs) at different  $\text{MgCl}_2$  concentrations:  $0 \text{ mM}$  (a),  $10 \text{ mM}$  (b),  $50 \text{ mM}$  (c) and  $100 \text{ mM}$  (d)

**Table S1** DLS measurements performed with a  $0.15 \text{ mg mL}^{-1}$  solution of fructose dehydrogenase (FDH) from *Gluconobacter japonicus* in  $10 \text{ mM NaH}_2\text{PO}_4$  pH 4.5 (3 repetitions, 12 runs) at different NaCl, KCl,  $\text{CaCl}_2$ ,  $\text{MgCl}_2$  concentrations

<b>Buffer <math>10 \text{ mM NaH}_2\text{PO}_4</math> pH 4.5</b>	<b>PDI</b>	<b>d.(nm)</b>
<b>No salt added</b>	$0.145 \pm 0.005$	$12.6 \pm 0.2$
<b>10 mM NaCl</b>	$0.135 \pm 0.003$	$14.8 \pm 0.1$
<b>50 mM NaCl</b>	$0.154 \pm 0.005$	$15.5 \pm 0.1$
<b>100 mM NaCl</b>	$0.123 \pm 0.008$	$15.9 \pm 0.2$
<b>10 mM KCl</b>	$0.134 \pm 0.011$	$14.3 \pm 0.1$
<b>50 mM KCl</b>	$0.148 \pm 0.014$	$14.9 \pm 0.2$
<b>100 mM KCl</b>	$0.091 \pm 0.011$	$15.1 \pm 0.2$
<b>10 mM <math>\text{CaCl}_2</math></b>	$0.130 \pm 0.004$	$15.6 \pm 0.3$
<b>50 mM <math>\text{CaCl}_2</math></b>	$0.311 \pm 0.007$	$52.4 \pm 1.5$
<b>100 mM <math>\text{CaCl}_2</math></b>	$0.244 \pm 0.012$	$606.7 \pm 67.0$
<b>10 mM <math>\text{MgCl}_2</math></b>	$0.240 \pm 0.045$	$652.5 \pm 79.2$
<b>50 mM <math>\text{MgCl}_2</math></b>	$0.292 \pm 0.027$	$915.1 \pm 85.1$
<b>100 mM <math>\text{MgCl}_2</math></b>	$0.273 \pm 0.009$	$811.5 \pm 35.9$