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Temperature modulates the response of the thermophilous sea urchin *Arbacia lixula* early life stages to CO₂-driven acidification

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1 **Temperature modulates the response of the thermophilous sea urchin *Arbacia lixula* early life**
2 **stages to CO₂-driven acidification**

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15

16 **Abstract**

17 The increasing abundances of the thermophilous black sea urchin *Arbacia lixula* in the
18 Mediterranean Sea are attributed to the Western Mediterranean warming. However, few data
19 are available on the potential impact of this warming on *A. lixula* in combination with other global
20 stressors such as ocean acidification. The aim of this study is to investigate the interactive effects of
21 increased temperature and of decreased pH on fertilization and early development of *A. lixula*. This
22 was tested using a fully crossed design with four temperatures (20, 24, 26 and 27°C) and two pH
23 levels (pH_{NBS} 8.2 and 7.9). Temperature and pH had no significant effect on fertilization and larval

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