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Nuclear applications to study potential effects (directs or indirects) of ocean acidification on marine organisms

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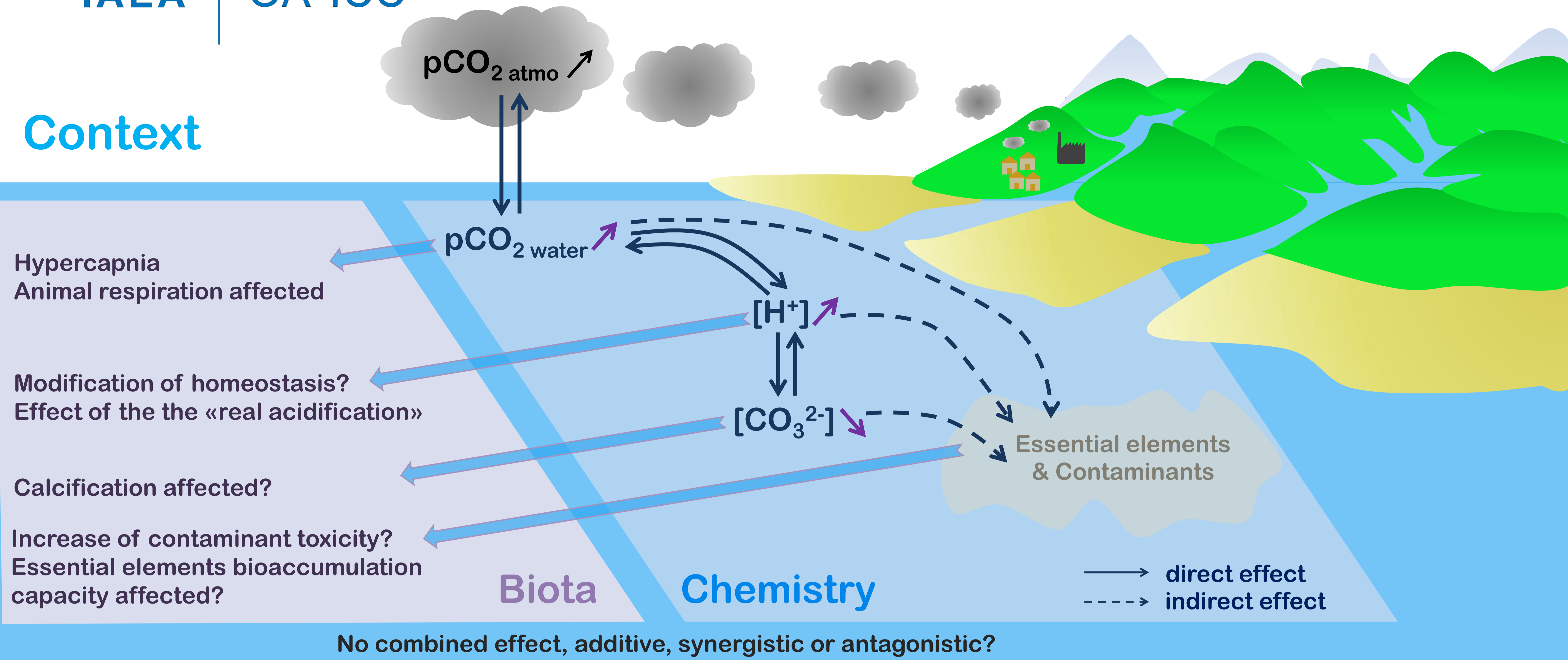
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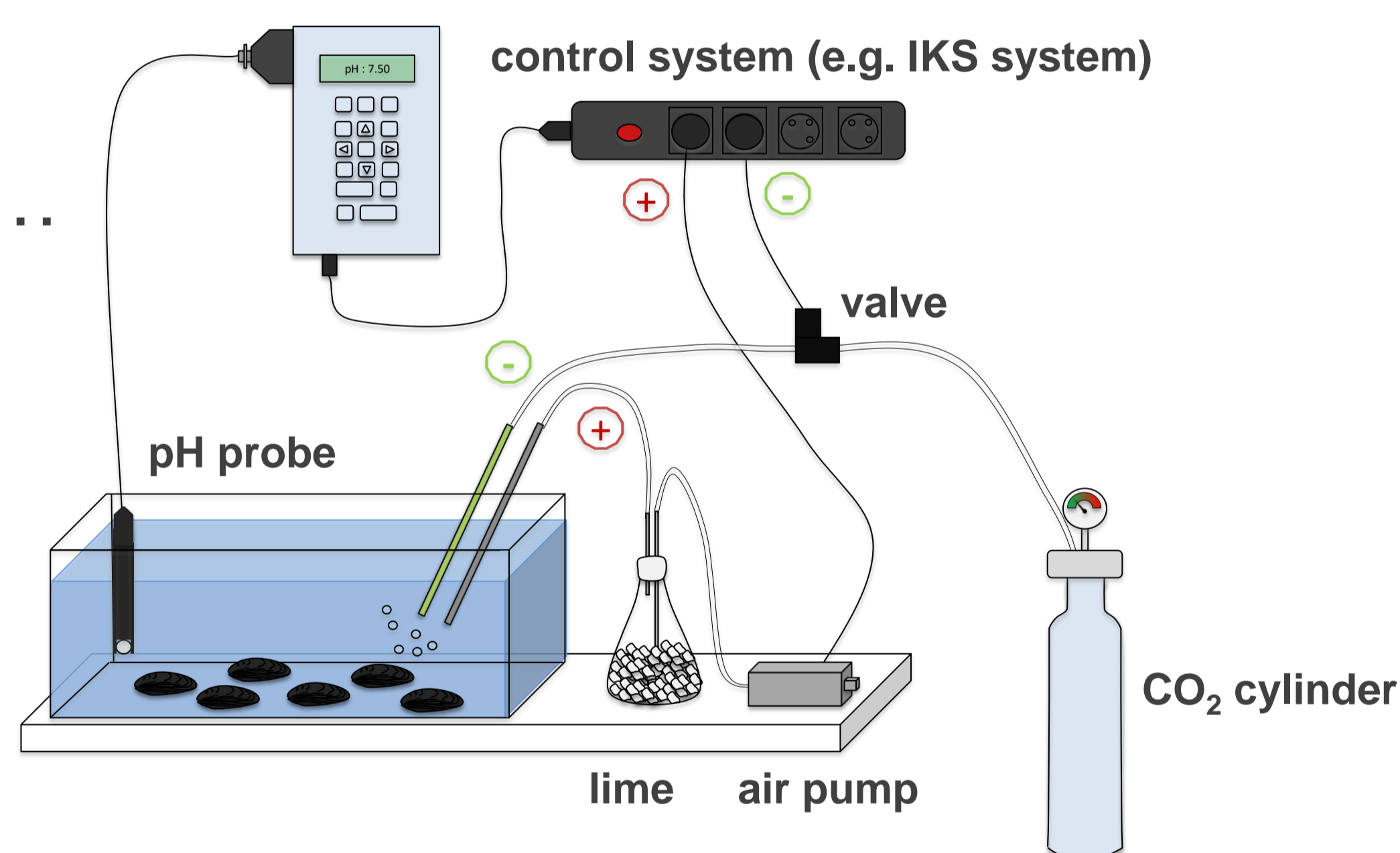
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Context



Experimental approach

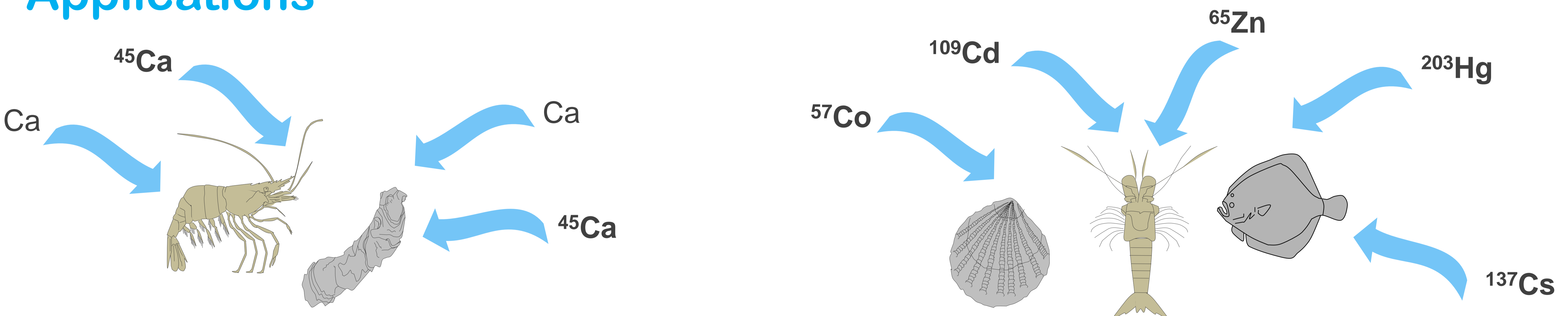
- Gamma emitters:**
 ^{51}Cr , ^{54}Mn , ^{57}Co , ^{65}Zn , ^{203}Hg ...
- Beta emitters:**
 ^{14}C , ^3H , ^{45}Ca , ^{63}Ni ...



Advantages of radiotracers

- Cost effective
- Low levels of elements used (closed to background levels)
- High sensitivity & specificity
- Easy handling
- Individual counting & Live organisms (for gamma emitters)

Applications



Impacts of ocean acidification on calcification

- **Production of commercial species**
Shrimps, bivalves, sea urchins...
- **High-value ecosystem as coral reefs**
High biodiversity, tourism....

Effects of ocean acidification on essential element and contaminant bioavailability

- **Potential element toxicity or depletion for organisms**
→ environment risk
- **Concentration in seafood**
→ human risk