

Gene gain and loss in bacteria transitioning between aquatic biomes

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Background:

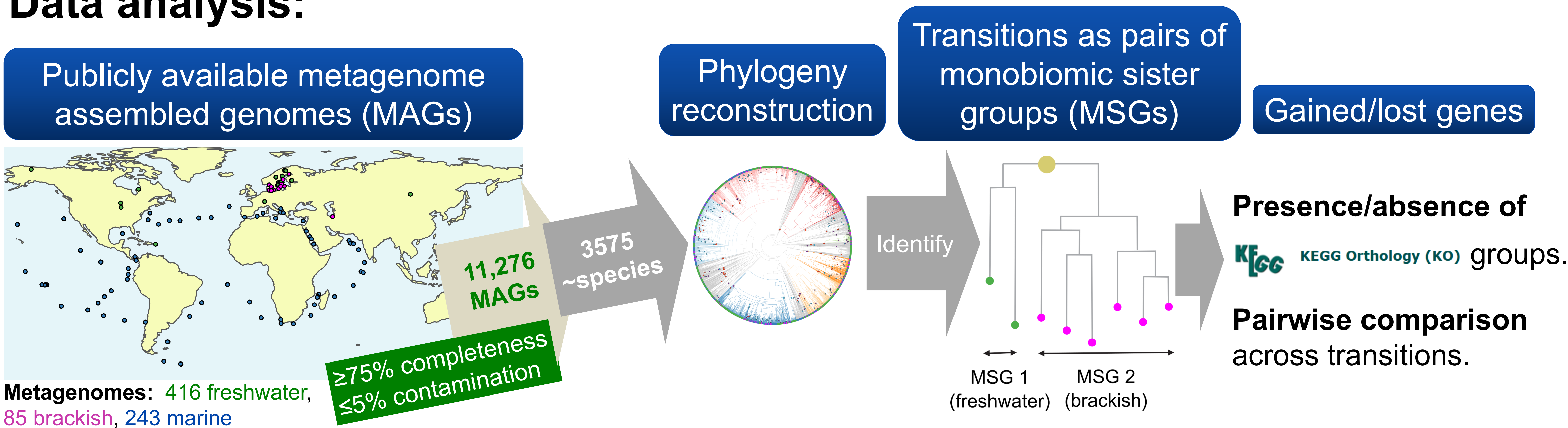
- Bacteria **rarely** undergo cross-biome **transitions**.
- High rates of **horizontal gene transfer** in bacteria are maintained due to rare **gains of genes key to adaptation**.
- Strong selective pressure restricting bacterial genome sizes leads to **frequent losses of redundant genes**.

Conclusions:

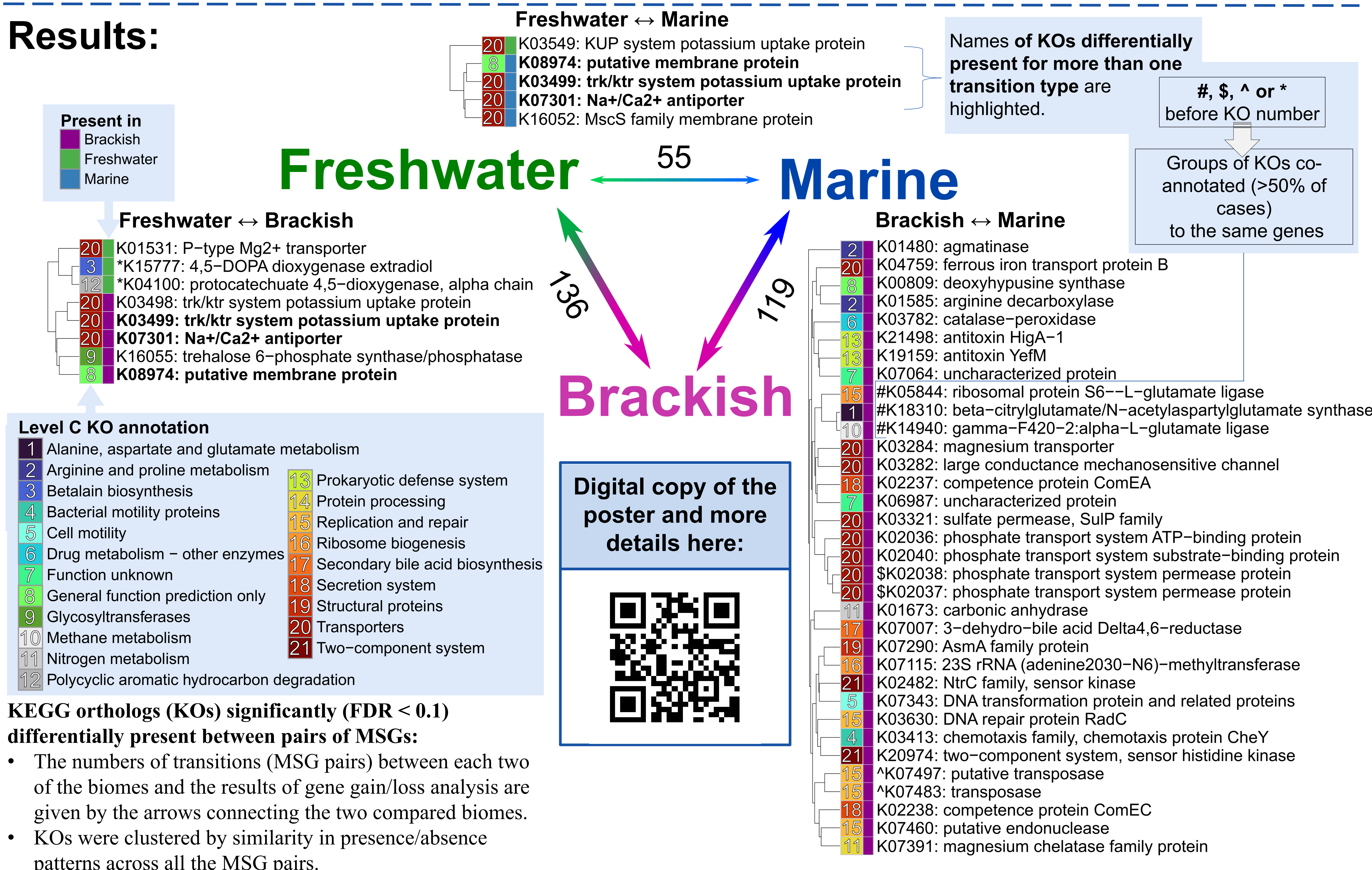
Specific genes are **gained/lost** throughout transitions between aquatic biomes by **diverse bacterial lineages**. These genes can be:

- directly connected to adaptation** to different concentrations of inorganic ions and osmotic pressure;
- connected to **other genomic and physiological** changes accompanying transitions;
- exposure to different **mobile genetic elements**.

Data analysis:



Results:



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