How an animal's biochemistry may support aggressive behavior

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Researchers who paired Siamese fighting fish in mock fights found that winning fish could supply more energy to their muscles during fights than losing fish.

The findings link the invisible processes going on inside cells to tangible consequences in the visible world, and they show how a behavior such as aggression can be affected by underlying biochemical processes that help sustain an animal's life.

"Conspicuous adaptations like antlers are usually what come to mind when thinking about traits that maximize success in aggressive interactions, but as these interactions tend to be energetically costly, less conspicuous processes that supply cellular energy are likely to be just as important," said Matt Regan, a co-author of the *Journal of Zoology* study. "Our study shows that in Siamese fighting fish, fighting success does require muscles with a greater biochemical ability to meet the energy demands of the muscle, as well as an all-out exploitation of these metabolic pathways during fights."

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