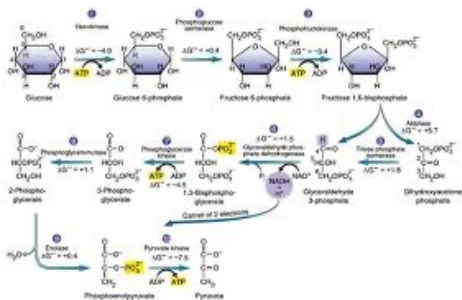


# Proteins in catabolic pathway getting “fed up” with ‘rate-limiting enzyme’



(Cytoplasm) Nine enzymes, all key members of an ancient metabolic pathway involved in energy production, expressed their collective frustration today over one of their own team member’s under performance over the past several billion years. “I don’t want to sound arrogant,” stated an isomerase known to act upstream of the

the implicated enzyme, “but catalyzing intramolecular rearrangements within a ring – that’s sort of a big deal mechanistically. Adding a simple phosphate to a substrate using ATP? I guess I’ve never understood why it should take so long.” Other enzymes in the catabolic pathway echoed this sentiment including at least one protein that performs a similar function at another step in the process. “Adding a phosphate to a receptive hydroxyl is not rocket science,” stated the kinase. “It’s just plug and play biochemistry – and I should know.” The issue, according to vexed pathway members, is less about flux rates and more about personal responsibility and mutual respect. “If everyone on the team is performing close to their (V) maximum ability but one of us isn’t, that just holds us all back,” stated an aggrieved downstream mutase. In its response, the denounced enzyme was quick to point out the hypocrisy of some of its accusers, claiming that under certain conditions they too can become rate-limiting. “I’m talking about certain kinases and a dehydrogenase that I happen to know!” retorted the protein. “And don’t even get me started on transporters,” added the maligned catalyst, “It’s like they must be unionized or something.” In addition, the unrepentant enzyme characterized the aired attacks as gross oversimplifications. “There’s a reason I do what I do when I do it,” explained the protein, “and sometimes there are forces at work that these other enzymes just don’t appreciate. It’s like, ‘Hey guys, I’d like you all to meet my good friend Al. Al Lostery?’” Regardless of current rancor within the pathway, most biochemists don’t expect anything to change soon. “We’ve heard this all before,” said Rupert Stiver. “Honestly, this will all blow over as soon as one of the TCA enzymes makes a predictably snide remark. Then they’ll close up ranks and it’ll be back to the usual deal with pathways hating on each other.”

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