

A Database for Finding Enzyme Candidates to Synthesize a Non-natural Product

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To synthesize a non-natural product in a metabolic network, we have to predict an enzyme which catalyzes a novel reaction. Since a biological reaction occurs when substrates are attached to an enzyme, the suitability of binding site and reaction type is important factor to determine whether an enzyme would catalyzes a reaction or not. Thus the similarity in terms of binding site and reaction type between the original reaction and the novel one should be defined and analyzed acceptably. If two reactions are *similar*, the enzyme catalyzing the original reaction is considered to be able to catalyze the novel reaction as well. We have constructed a database for binding sites and reaction types so as to find *similar* reactions which exist in nature to a novel reaction.

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