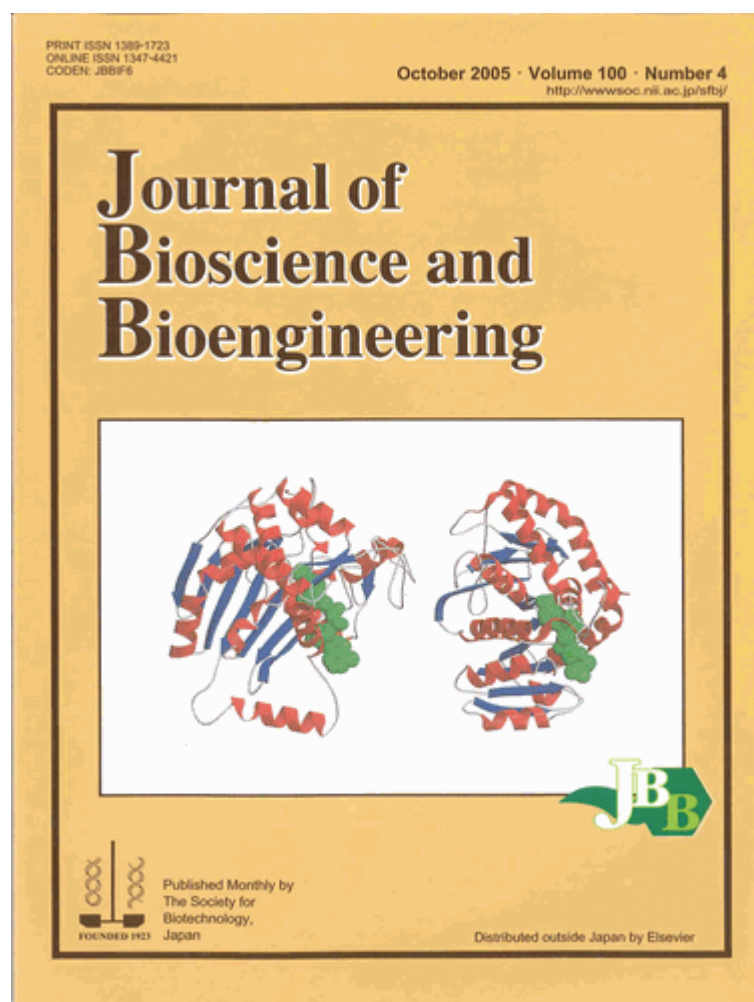


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Finding of a new family of NAD(P)H-dependent oxidoreductases with no Rossmann-fold.

The Overall structure of Δ^1 -piperideine-2-carboxylate (Pip2C)/ Δ^1 -pyrroline-2-carboxylate (Pyr2C) reductase from *Pseudomonas syringae* (left) is distinct from that of a typical Rossmann-fold enzyme, malate dehydrogenase from *Escherichia coli* (right). α -Helices and α -sheets are shown in red and blue, respectively. NADP⁺ (left) and NAD⁺ (right) molecules are in green.

The new NAD(P)H-dependent oxidoreductase family proteins which have no Rossmann-fold were classified into eight clades. Pip2C/Pyr2C reductase belongs to the DpkA clade in the new family. This classification would be useful for reliable functional annotation of the new family of NAD(P)H-dependent oxidoreductases.

Related article: Muramatsu, H., Mihara, H., Goto, M., Miyahara, I., Hirotsu, K., Kurihara, T., and Esaki, N., "A new family of NAD(P)H-dependent oxidoreductases distinct from conventional Rossmann-fold proteins", *J. Biosci. Bioeng.*, vol. 99, 541-547 (2005).

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