**Description of Additional Supplementary Files**

File Name: Supplementary Figure S1

Description: **The structurally unresolved loop structure of NamPT.** Sequence alignment of NamPT of different species cropped to the region around the unresolved loop structure. Coloured rectangles indicate the enzymes present in the species besides NamPT; blue: NNMT; black: NADA and NNMT; yellow: NADA; green: NamPT only. Major clades are indicated for better orientation. Number of amino acid indicated at the top refer to the human protein.

File Name: Supplementary Table S1

Description: Query proteins used for Blast searches.

File Name: Supplementary Table S2

Description: Overview of kinetic constants and rate laws used for the construction of the mathematical model.

File Name: Supplementary Table S3

Description: Root mean square deviation (RMSD) values between different structures.