

Table S1. Dissociation constant (K_d) of human MPCs.

	hMPC-1	hMPC-2	hMPC-1/hMPC-2
Pyruvate (mM)	11.96 ± 0.77	12.95 ± 0.90	8.914 ± 1.09
UK5099 (μM)	26.03 ± 1.47	22.46 ± 1.14	17.86 ± 0.82
Pioglitazone (μM)	84.08 ± 10.31	99.27 ± 14.52	60.26 ± 6.11

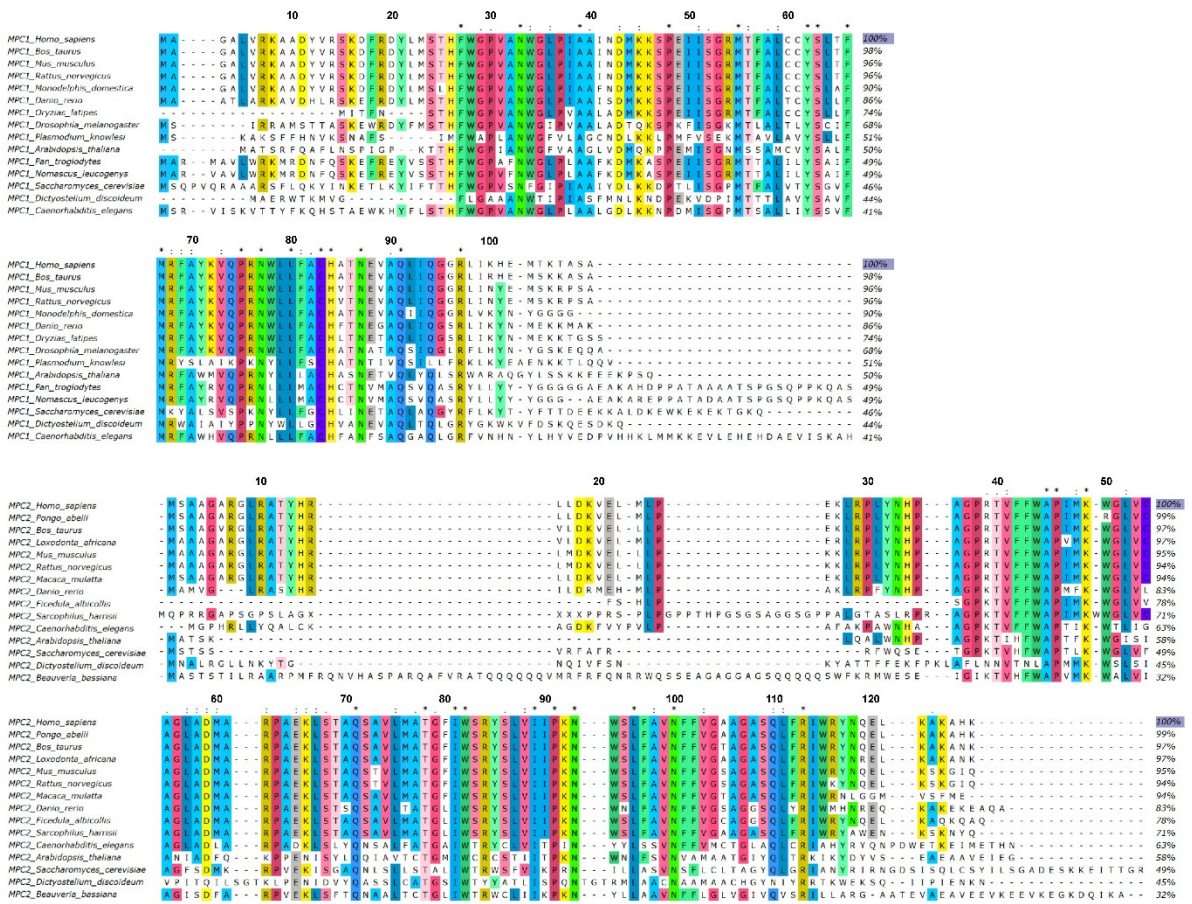


Figure S1. Sequence alignment of hMPC-1 and hMPC-2.

Protein sequence alignment of (a) hMPC-1 and (b) hMPC-2 homologs in the following species. All sequences were aligned and visualized by Clustal W and Ugene programs. Accession numbers are: *Homo sapiens* MPC1: NP_057182.1, *Bos taurus* MPC1: NP_001070510.1, *Mus musculus* MPC1: NP_061289.1, *Rattus norvegicus* MPC1: NP_598245.1, *Monodelphis domestica* MPC1: NC_008802.1, *Danio rerio* MPC1: NP_001002398.2, *Oryzias latipes* MPC1: NC_019861.2, *Drosophila melanogaster* MPC1: NP_0011262720.1, *Plasmodium knowlesi* MPC1: XP_002259944.1, *Arabidopsis thaliana* MPC1: NP_001078606.1, *Pan troglodytes* MPC1: XP_001137474.1, *Nomascus leucogenys* MPC1: XP_003271054.1, *Saccharomyces cerevisiae* MPC1: NP_011435.1, *Dictyostelium discoideum* MPC1: XP_647090.2, *Caenorhabditis elegans* MPC1: NP_497894.2, *Homo sapiens* MPC2: NP_001137146.1, *Pongo abelii* MPC2: NP_001126868.1, *Bos taurus* MPC2: NP_001180050.1, *Loxodonta africana* MPC2: XP_003414942.1, *Mus musculus* MPC2: NP_081706.1, *Rattus norvegicus* MPC2: NP_001071111.1, *Macaca mulatta* MPC2: NC_041754.1, *Danio rerio* MPC2: NC_007120.7, *Ficedula albicollis* MPC2: NC_021671.1, *Sarcophilus harrisi* MPC2: NW_003838759.1, *Caenorhabditis elegans* MPC2: NP_491234.1, *Arabidopsis thaliana* MPC2: NP_001319940.1, *Saccharomyces cerevisiae* MPC2: NP_012032.1, *Dictyostelium discoideum* MPC2: XP_647091.1, *Beauveria bassiana* MPC2: XP_008602977.1.

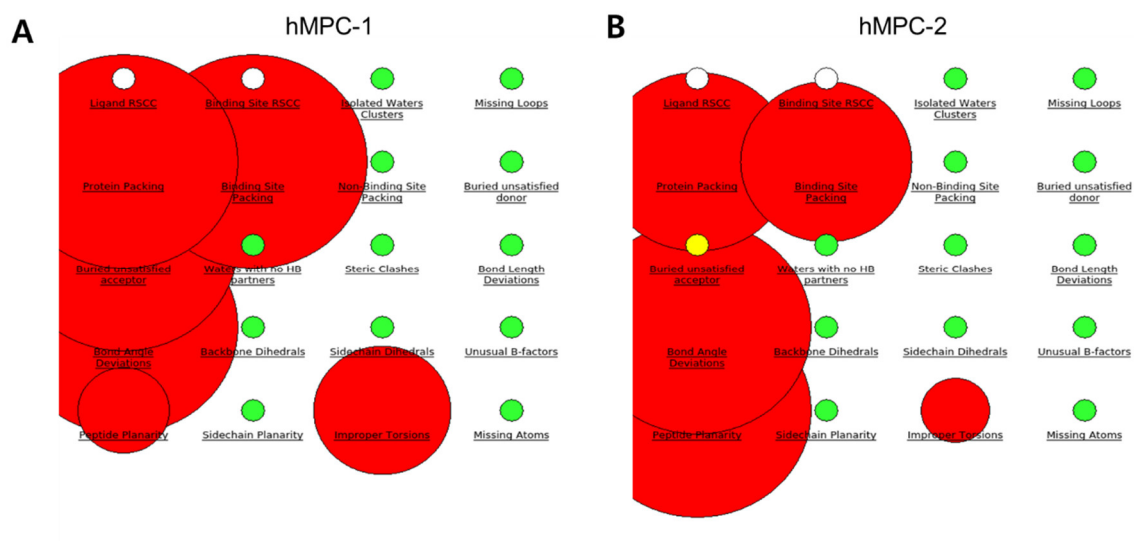


Figure S2. Structural validation of hMPC-1 and hMPC-2 model structure.

Protein packing values of (A) hMPC-1 and (B) hMPC-2 were analyzed by Maestro program.

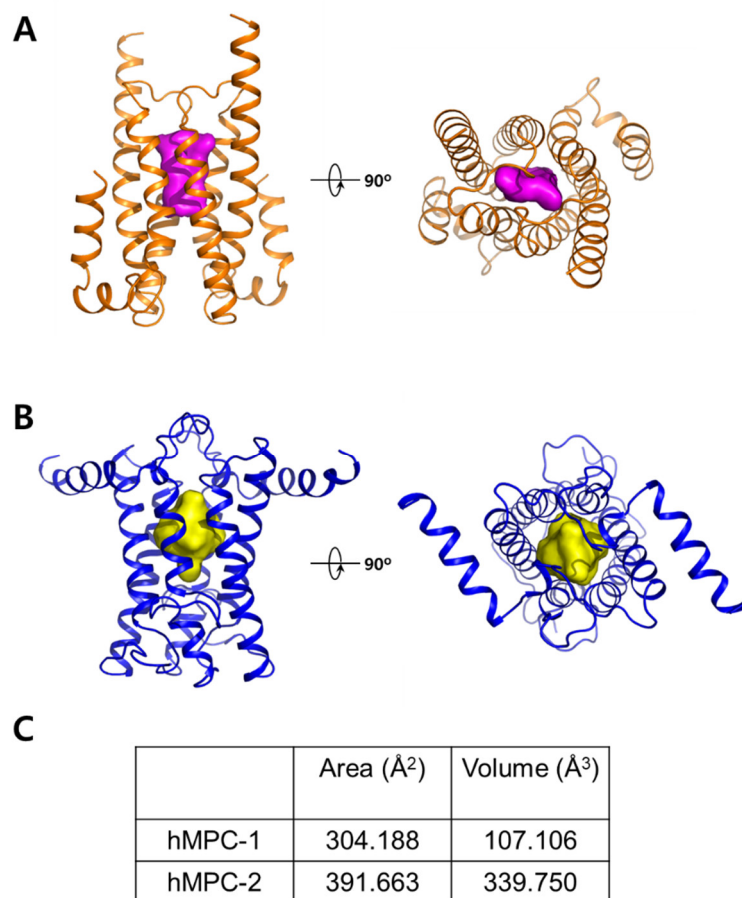


Figure S3. Analysis of the internal cavities of hMPC-1 and hMPC-2.

Analysis of the internal cavities of hMPC-1 and hMPC-2. Internal cavities of (A) hMPC-1 and (B) hMPC-2 were displayed surface model colored by magenta and yellow in the ribbon model. (C) Calculated area (\AA^2) and volume (\AA^3) of internal cavities of hMPC-1 and hMPC-2 are displayed.