

Component interactions of soluble methane monooxygenases from *Methylosinus sporium* 5

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The SEA (specific enzymatic activities) of sMMO are widely investigated to understand its enzymatic activity and turnover rate to understand the influence by CH₄, O₂, e⁻, and H⁺. The ratio between substrates and enzymes need to be further investigated to understand its possible influences during expression of sMMO. The expression of MMOH is described based on the ratio of CH₄ and O₂. The expression level in sMMO is important for the purification of MMOH and the complex formation of six subunits needs to discover further mechanism studies through MMOG. The CH₄ oxidation is performed in α-subunit of MMOH and β-subunit generates specific interactions for the dimeric formation of MMOH. The function of γ-subunit is not well quite understood, but this small-subunit only detected in water-soluble region after cell-lysis. The CH₄ concentration of sMMO proved that the injection volume of CH₄ and O₂ affect the volume of soluble portion of MMOH. In addition, the differences of these species depend on the concentration of γ-subunit. The SEA are affected by the concentration of CH₄ and O₂, the ratio of reductase components. Also, high concentration of O₂ decrease the SEA.