1 NOMENCLATURE

EC number
2.1.1.12

Systematic name
S-Adenosyl-L-methionine:L-methionine S-methyltransferase

Recommended name
Methionine S-methyltransferase

Synonyms
S-Adenosyl methionine:methionine methyl transferase
Methyltransferase, methionine S-
Methionine methyltransferase
S-Adenosylmethionine transmethylase
S-Adenosylmethionine-methionine methyltransferase

CAS Reg. No.
9027-77-4

2 REACTION AND SPECIFICITY

Catalysed reaction
S-Adenosyl-L-methionine + L-methionine →
→ S-adenosyl-L-homocysteine + S-methyl-L-methionine

Reaction type
Methyl group transfer

Natural substrates
S-Adenosyl-L-methionine + L-methionine [1–3]

Substrate spectrum
1 S-Adenosyl-L-methionine + L-methionine [1–4]

Product spectrum
1 S-Adenosyl-L-homocysteine + S-methyl-L-methionine [1, 2]

Inhibitor(s)

Cofactor(s)/prosthetic group(s)/activating agents

Metal compounds/salts
Zn\(^{2+}\) (requires Zn\(^{2+}\) (0.1 mM) or Mn\(^{2+}\) (1 mM)) [1]; Mn\(^{2+}\) (requires Zn\(^{2+}\) (0.1 mM) or Mn\(^{2+}\) (1 mM)) [1]
Methionine S-methyltransferase

Turnover number (min⁻¹)
Specific activity (U/mg)
  More (enzyme assay) [2]
Kₘ-value (mM)

pH-optimum
  6.5 [1]

pH-range
  5.7–7.3 (about 60% of activity maximum at pH 5.7 and 7.3) [1]

Temperature optimum (°C)
  25 (assay at) [1]; 30 (assay at) [3]; 35 (assay at) [2]

Temperature range (°C)

3 ENZYME STRUCTURE
Molecular weight
Subunits
Glycoprotein/Lipoprotein

4 ISOLATION/PREPARATION
Source organism
  Wheat [1]; Mung bean [1]; Barley [1]; Lemna paucicostata [3]; Glycine max [3]; Daucus carota [3]; More (overview: more than 20 plants covering a wide phylogenetic range) [4]

Source tissue
  Germ [1]; Shoot [1]; Suspension culture [3]

Localization in source

Purification
  Wheat (partial) [1]

Crystallization

Cloned

Renatured