

Hydrogen sulphide synthesis

Overview: Hydrogen sulphide is a putative gasotransmitter, with similarities to nitric oxide and carbon monoxide. Although the enzymes indicated have multiple enzymatic activities, the focus of this table is the generation of hydrogen sulphide and the enzymatic characteristics are described accordingly.

Nomenclature	Cystathionine β -synthase	Cystathionine γ -lyase	L-Cysteine:2-oxoglutarate aminotransferase	3-Mercaptopyruvate sulfurtransferase
EC number	4.2.1.22	4.4.1.1	4.4.1.13	2.8.1.2
Preferred abbreviation	CBS	CSE	CAT	MPST
Other names	Serine sulfhydrase, β -thionase	CGL, γ -cystathioninase, CTH	Kynurenine:2-oxoglutarate transaminase (EC 2.6.1.7), glutamine-phnylpyruvate transaminase (EC 2.6.1.64), cysteine transaminase, cysteine aminotransferase	–
Ensembl ID	ENSG00000160200	ENSG00000116761	ENSG00000171097	ENSG00000128309
Cofactor/s	Pyridoxal phosphate	Pyridoxal phosphate	Pyridoxal phosphate	Zinc
Substrates (K_m)	Cysteine (6 mM, Chen <i>et al.</i> , 2004), homocysteine	Cysteine	Cysteine	3-Mercaptopyruvate (1.2 mM, Nagahara <i>et al.</i> , 1995)
Products	Cystathionine	Pyruvate, ammonia	Pyruvate, ammonia	Pyruvate
Inhibitors	Aminooxyacetic acid	Propargylglycine		

Further Reading

- Kawabata A, Ishiki T, Nagasawa K *et al.* (2007). Hydrogen sulphide as a novel nociceptive messenger. *Pain* **132**: 74–81.
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References

- Chen X *et al.* (2004). *J Biol Chem* **279**: 52082–52086.
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