Sulfazyme™ PaS

MADE IN THE USA

imcs integrated micro-chromatography systems

E. coli expressed arylsulfatase (2 mg/mL) from *Pseudomonas aeruginosa*

Specifications and Guidelines

Recommended reaction set up for cortisol 21-sulfate hydrolysis:

(Consult table for recommended volumes)

- Allow the enzyme to thaw at room temperature until fully liquid and homogeneous. Gently mix, if necessary, to ensure a uniform solution before use.
- Add MilliQ water to urine samples.
- Add 1 M Tris-HCl, pH 8.0 Buffer.
- Add internal standard or additional MilliQ water.
- Add Sulfazyme PaS and mix gently.
- DO NOT VORTEX.
- Incubate at 37 °C for 4 hours.

Hydrolysis Reaction Conditons	No Enzyme (Unhydrolyzed urine blank) (µL)	Sulfazyme™ only (PaS, DS or β-AS) (µL)	B. pi β-GUS only (µL)	Sulfazyme™ (PaS, DS or β-AS) and B. pi β-GUS (µL)
Urine	200	200	200	200
Buffer (1.0 M Tris-HCl, pH 8.0)	30	30	30	30
Internal standard (or use MilliQ water)	20	20	20	20
MilliQ water	180	160	160	140
Sulfazyme™ (PaS, DS or β-AS)	0	20	0	20
Glucuronidase (B. pi β-glucuronidase variant)	0	0	20	20
Total Volume (µL)	430	430	430	430

Content and Storage Guidelines:

The enzyme is stable at -20 °C. Refer to the Certificate of Analysis and bottle label for the specific lot expiry. The enzyme is supplied in a proprietary formulation designed to ensure long-term stability under recommended storage conditions. **Dilution may reduce shelf-life and is not recommended. Do NOT exceed three freeze-thaw cycles.**

Product Sterility:

IMCS products undergo strict quality control to ensure product sterility. The product can become contaminated if mishandled. Follow aseptic technique to avoid contamination.

Sulfazyme Hydrolysis vs. other sulfatases[1]:

Sulfated Compound (100 µM sulfated compound at 37 °C)	Sulfazyme™ PaS	Other Sulfatases				
		PaS	HpS	HrS	PvS	KpS
p-nitrophenyl sulfate	7	7	6	5	3	2
estrone/estradiol 3-sulfate	7	7	5	3	2	0
tapentadol sulfate	6	no data	no data	no data	no data	no data
cortisol 21-sulfate	5	no data	no data	no data	no data	no data
nandrolone 17-β-sulfate	3	3	1	0	0	0
boldenone 17-β-sulfate	2	2	2	0	0	0
testosterone 17-β-sulfate	2	2	1	1	0	0

Activity in µmol product/min·mg enzyme

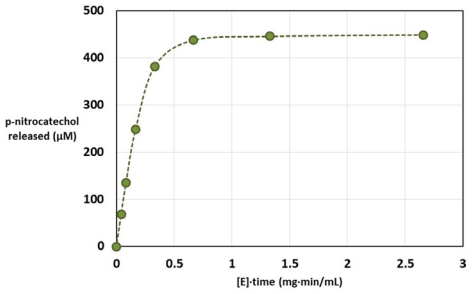
Sulfatase activity is represented on a logarithmic scale, with:

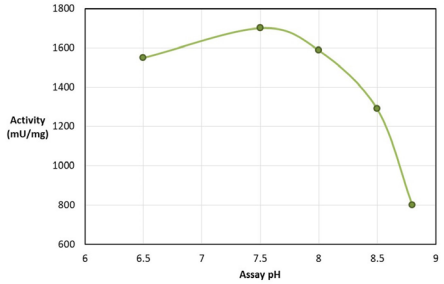
0	no detectable activity
1	0.005-0.05
2	0.05-0.5
3	0.5-5
4	5-50
5	50-500
6	500-5,000
7	5,000-50,000

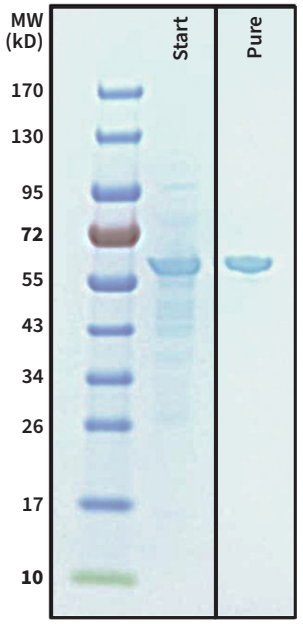
PaS	*Pseudomonas aeruginosa* Sulfatase
HpS	*Helix pomatia* Sulfatase
HrS	*Haliotis rufescens* Sulfatase
PvS	*Patella vulgata* Sulfatase
KpS	*Klebsiella pneumoniae* Sulfatase

[1]Stevenson BJ, Waller CC, Ma P, Li K, Cawley AT, Ollis DL, and MD McLeod (2015) *Pseudomonas aeruginosa* arylsulfatase: a purified enzyme for the mild hydrolysis of steroid sulfates. *Drug Test. and Anal.* **7,** 903-911.

Sulfazyme Activity and Purity:







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Certificate of Analysis and Safety Data Sheets are available under "resources" at www.imcstips.com.

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