

6-Hydroxymethyl-7,8-dihydropterin hydrochloride

Product number 11.421

Attention: *In contrast to dihydrobiopterin and dihydroneopterin is 6-hydroxymethyl-7,8-dihydropterin extremely sensitive to oxygen. After removing the Na₂S₂O₄ the reaction mixtures must be protected from oxygen and all work has to be done very quickly.*

In a 1 l round bottom flask with a 3 cm egg shaped magnetic stir bar, 1.5 g of 6-hydroxymethylpterin (pulverized and sieved) are suspended in 600 ml of water and dissolved by the addition of 4.05 g of 1 N NaOH (about 5% may stay undissolved). A glass stopcock is added and the round bottom flask is evacuated. Subsequently 3.7 g of sodium dithionite are added and the round bottom flask is evacuated immediately.

The round bottom flask is warmed in a water bath at 70 °C with gentle stirring. After about 20 minutes the solution becomes brown. After about an hour it is light yellow, all is dissolved and the stirring machine is switched off.

After about 90 minutes the color does not get any lighter and the round bottom flask is cooled in an ice/water bath.

The pH is lowered to about 3.0 by the addition of about 16.5 ml 1 N HCl through a dropping funnel within 10 minutes. The round bottom flask is evacuated and furthermore cooled in an ice/water bath for 1.5 hours.

The precipitated 6-hydroxymethyl-7,8-dihydropterin hydrochloride is filtered through a 7 cm filtration funnel and the filter cake is rinsed with 50 ml of cold water (2°C) and dried in a vacuum desiccator over NaOH to give 1.1 g of raw 6-hydroxymethyl-7,8-dihydropterin hydrochloride.

Recrystallisation

The raw 6-hydroxymethyl-7,8-dihydropterin hydrochloride is ground and sieved and placed in a 1 l round bottom flask with 570 ml of water and 30 ml of 1 N HCl. A glass stopcock is added immediately, the flask is swirled twice and the round bottom flask is evacuated first with a diaphragm pump and subsequently with a chemistry hybrid vacuum pump (the pump must be warmed up before use). The round bottom flask is swirled and sonicated for 5 minutes.

Then the flask is placed in a water bath at 60°C for about 20 minutes until about 95% of the 6-hydroxymethyl-7,8-dihydropterin hydrochloride is dissolved.

The round bottom flask is first placed in a water bath at 20°C for a short time, then for 2 hours at a dark place and then at 3°C overnight.

The following steps must be performed very fast:

The precipitated dihydrobiopterin is filtered through a 7 cm filtration funnel and the filter cake is rinsed with 20 ml of cold water (2°C) and dried in a vacuum desiccator over NaOH to give 0.95 g of 6-hydroxymethyl-7,8-dihydropterin hydrochloride.

Purity: 98.1% (HPLC)

Description: Beige colored powder

Data Sheet: There is a data sheet available for this compound.

Data sheets can be found in the price list by clicking on the product number of your choice.