



## Solubility Testing – Shake Flask Method

### Summary

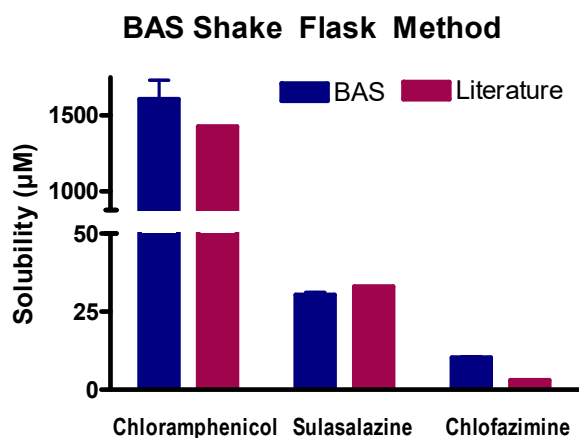
The solubility of a drug compound plays a significant role in absorption and is an important factor to consider during development. Quantitative measurement of compound solubility is an ideal early test to perform when screening for potential drug candidates.

BioAssay Systems (BAS) offers two methods for quantifying the solubility of drug compounds: filter plate solubility testing and shake flask solubility testing. This information page details the Shake Flask Method.

### Method

In 2 mL tubes, an excess of the test compound is weighed out and mixed with a solvent of customer's choice. The tubes are shaken for 18 hours (or desired duration) at ambient temperature (or desired temperature). The solution is vacuum filtered to remove precipitates. Absorbance spectrum is run on the filtrate together with the test compound standards. Concentration of the filtrate is calculated using the slope of the standards.

### Examples



BAS Shake Flask Method (n = 3)	
Drug Tested	Avg ± SD (µM)
Chloramphenicol	1607 ± 218
Sulfasalazine	31 ± 2
Clofazimine	11 ± 1

**Figure 1:** Drug compound solubility determined using the shake flask method. Testing was repeated three times on separate days. Experimentally determined solubility of drug compounds using the shake flask method were compared to literature values.<sup>1,2</sup>

### Literature

1. Wishart DS, Feunang YD, Marcu A, Guo AC, Liang K, et al., HMDB 4.0 — The Human Metabolome Database for 2018. Nucleic Acids Res. 2018. Jan 4;46(D1):D608-17. 29140435
2. National Center for Biotechnology Information. PubChem Compound Database; CID=5359476, <https://pubchem.ncbi.nlm.nih.gov/compound/5359476> (accessed May 22, 2018).