

## Solubility Procedure

- Prepare a 40% w/v Captisol solution by dissolving 400 mg (corrected for water content) with water to a total volume of 1 mL (Solution #1).
- Serially dilute Solution #1 as indicated in the table below to create solutions #2-6.
- To six vials, add the sufficient material candidate as indicated below.
- To each vial, add ½ mL of the corresponding Captisol solution, cap the vials, sonicate and place on a tumbling apparatus at room temperature.
- Allow the vials to agitate for up to 24 hours or whatever the material stability will allow.
- Centrifuge or filter the suspensions to obtain clear solutions.
- Analyze the solutions for material content.

### Captisol and Material needed to conduct a rapid solubility screen

#	Captisol Solution Preparation	Captisol Concentration		Milligrams of material added to ½ mL solution <sup>1,2</sup>	
		% w/v	Molar <sup>3</sup>	Minimum	Typical <sup>4</sup>
1	400 mg Captisol in 1 mL Water	40	0.185	46 + S/2	50
2	½ mL Solution 1 + ½ mL Water	20	0.0925	23 + S/2	25
3	½ mL Solution 12 + ½ mL Water	10	0.0462	12 + S/2	25
4	½ mL Solution 3 + ½ mL Water	5	0.0231	6 + S/2	25
5	½ mL Solution 4 + ½ mL Water	2.5	0.0116	3 + S/2	10
6	Water	0	0	S/2	10
Total Captisol & Material Required (mg)		400		90 + 3S	145

<sup>1</sup>S is the intrinsic solubility of the material in water.

<sup>2</sup>Assumes a material molecular weight of 500 and maximum solubility < [Captisol, M].

<sup>3</sup>Based on a Captisol molecular weight of 2163 (DS = 6.5).

<sup>4</sup>More practical amounts are typically used in order to facilitate weighing and handling. The stated amounts are sufficient when the intrinsic water solubility is quite low.