



Garlic tablets travel down the **esophagus** at a rate of approximately 3 to 4 centimetres per second (1 to 2 inches), and the entire process takes about 5 to 6 seconds. In the **stomach**, they tend to hang around for a little longer and this depends on a variety of factors including the amount of food you have consumed, how much fat it contains, and also the acidity of the stomach. However, all food should have left the stomach within 1 hr 45min-2 hrs

In the **small intestine**, digestion continues and absorption occurs-should have complete dissolution in 45 min. From here on, the time to defecation will vary depending on the time it takes to adequately digest and absorb in the small intestine. USP method 724A

Discussion: Comparing Garlic Supplements Using USP Method 724A
Definition. USP Method 724A is called the "General Drug Release Standard" for "delayed release (enteric-coated) articles" [1995 United States Pharmacopoeia, pages 1795-96]. It is the standard used nationwide by pharmaceutical companies. USP standards and methods are officially recognized as valid by the Food & Drug Administration.

Standards. The USP 724A standard requires two hours of protection of the tablets from acid followed by complete drug release (disintegration/dissolution of the tablets) in 45 minutes in intestine-simulating buffer. This standard fits with garlic tablets because the 45 minute release in buffer closely matches the length of time in which alliinase has activity.

Although the standard applies only to delayed-release (enteric coated) tablets, any garlic supplement that makes allicin claims should be evaluated by this standard.

Label claims. According to USP 724A, the label claim for allicin must match the amount of allicin actually released under the conditions of this method, not by simply dissolving crushed tablets in water which will always produce higher values.

Table 2: Dissolution media and transit times used in the study

GI Segment	Transit time	Medium	pH value
Stomach	120 min	Simulated Gastric Fluid USP 24 sine pepsin (SGFsp)	1.2
Duodenum	10 min	Phosphate Buffer Ph Eur. 1997	6.0
Jejunum	120 min	Simulated Intestinal Fluid USP 24 sine pancreatin (SIFsp)	6.8
Proximal Ileum	30 min	Phosphate Buffer Ph Eur. 1997	7.2
Distal Ileum	30 min	Simulated Intestinal Fluid USP 23 sine pancreatin (SIFsp)	7.5