Arcis Sample Prep Protocol Modifications For Dilute Samples

The Arcis Sample Prep System is a 2-step liquid-reagent and is inherently dilutive of the starting sample. This has a beneficial effect by diluting inhibitors but comes with a trade-off as the target within a sample is also diluted. For applications where enhanced sensitivity is required, the following protocol modifications can be used to boost the yield of nucleic acids.

Sample types where this may be beneficial include dilute biological samples such as saliva, urine, swabs that have been placed into a carrier solution and eDNA. The standard kit protocol is a good point at which to start.

Step One (Sample addition to Reagent 1)

By modifying step one of the protocol a 3-fold increase is possible. For example, if a 30µl sample contains 1800 genome copies, following the standard protocol (1:5 ratio) gives a solution with 10 copies/µl. This can be increased to 30 copies/µl by using a 1:1 ratio.

	Sample Input	Reagent 1	Ratio
STEP 1	**30µl**	**150µl**	**1:5**
		120µl	1:4
		90µl	1:3
		60µl	1:3
		30µl	1:1

Step Two (Sample/Reagent 1 addition to Reagent 2)

By modifying step two of the protocol a 2.5-fold increase is possible. For example, if the material from step 1 contains 1000 copies/µl, then the standard protocol (1:4 ratio) will yield a solution with 200 copies/µl. This can be increased to 500 copies/µl by using a 1:1 ratio.

Although the standard protocol recommends 3 minutes for lysis in Reagent 1, some samples may benefit from an extended incubation, up to 10 minutes. Additionally, non-chemical methods may improve lysis and yield for the most durable biological membranes, these include heating, vortexing and bead-beating in the presence of Reagent 1.

	Sample/R1 Input	Reagent 2	Ratio
STEP 2	**10µl**	**40µl**	**1:4**
	20µl		1:3
	30µl		1:2
	40µl		1:1

Version 001 10/17

For further information please visit **arcisbio.com**

ARCIS BIOTECHNOLOGY