

# Activin A vial recovery

Supplier	Source	Formulation	Quantity purchased (µg)	Yield (µg)	Yield (%)
A	E.coli	animal free, lyophilised	2 x 10	17.2	86
B	E.coli	animal free, lyophilised (no additives)	2 x 10	15.2	76
B	Insect	lyophilised from 10mM Sodium Citrate pH 3.0	2 x 10	20	100
C	CHO	research grade, lyophilised, stabiliser mannitol and trehalose	2 x 10	11.6	58
C	CHO	premium grade, lyophilised, stabiliser mannitol and trehalose	2 x 10	11.1	56
D	CHO	lyophilised (no BSA)	2 x 10	10	50
E	Plant	lyophilised (no BSA)	2 x 5	13.5	135
Qkine	E.coli	lyophilised (no BSA)	25	25.5	102

Table: Summary of Activin A vial recovery yield from different suppliers, sources, and grades.

## Introduction:

When reconstituting growth factors and preparing media, it is often taken for granted that the amount of protein stated on the vial accurately reflects the amount of protein in the vial. This should be a safe assumption but unfortunately, this is not always the case.

## Method:

Activin A from Qkine and five alternative suppliers (two proteins from different sources or grades was purchased from suppliers B and C) was reconstituted in 10 mM HCl to a final expected protein concentration of 0.5 mg/ml. Protein concentration was determined in triplicate spectrophotometrically by measuring the spectrum from 320–220 nm and using scattering corrected absorption at 280 nm. A theoretical absorption coefficient of 18950 AU mol<sup>-1</sup> cm<sup>-1</sup> was used for the calculation of protein concentration.

## Results:

Protein recovery yields ranged from 50% - 135% across 8 samples of Activin A provided by different suppliers. The yield of animal-free Activin A (expressed in *E. coli*) manufactured by Qkine was 102%. The wide variation in yields highlight the importance of measuring vial recovery as part of a standard QC process.