You mix 0.20mL of a solution containing 6 g L-1 albumin with 2.80 mL of BCG reagent. Assuming the volumes are additive, what is the concentration of albumin in the resulting solution?

Solution:

1.M(albumin)=68400 gram/mole;

2.n(albumin)=m(albumin)/M(albumin);

n(albumin)=6/68400=8.77×10^-5;

3.V(resulting solution)=V(solution albumin)+V(BCG reagent);

V(resulting solution)=0.0002+0.0028=0.003 L;

4.C(albumin)=n(albumin)/V(resulting solution);

C(albumin)=8.77×10^-5/0.003=0.03 L/mole

Answer:C(albumin)=0.03 L/mole.