Sphingosine kinase (SphK) is a conserved lipid kinase that catalyzes formation sphingosine-1-phosphate (S1P) from the precursor sphingolipid sphingosine. Sphingolipid metabolites, such as ceramide, sphingosine and sphingosine-1-phosphate, are lipid second messengers involved in diverse cellular processes. There are two forms of SphK, SphK1 and SphK2. SphK1 is found in the cytosol of eukaryotic cells, and migrates to the plasma membrane upon activation. SphK2 is localized to the nucleus.