Abstract

Let $\mathcal{A} = l^1(\mathbf{Z}_+)$ be the unital semigroup algebra of $\mathbf{N}$. We show that the cyclic cohomology groups $\mathcal{H}C^n(\mathcal{A}, \mathcal{A}')$ vanish when n is odd and are one-dimensional when n is even $(n \geq 2)$. Using Connes' exact sequence, these results are used to show that the simplicial cohomology groups $\mathcal{H}^n(\mathcal{A}, \mathcal{A}')$ vanish for $n \geq 2$. The results obtained are extended to unital algebras $l^1(S)$ for some other semigroups of $\mathbf{R}$.