Hochschild cohomology of q-Schur algebras

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Let k be a field of characteristic zero and let $q \in k$ be a root of unity. We denote a q-Schur algebra over k by S. S can be viewed as the quotient algebra of a general linear quantum group. We recall the definition of the i-th Hochschild cohomology group of A, $\mathrm{HH}^i(A) := \mathrm{Ext}^i_{A^{\mathrm{en}}}(A, A)$, where $A^{\mathrm{en}} := A \otimes_k A^{\mathrm{op}}$ acts on the left on A by left and right multiplication. Then $\mathrm{HH}^\bullet(A) := \bigoplus_{i \geq 0} \mathrm{HH}^i(A)$ is a graded algebra with the Yoneda product. It is known that $\mathrm{HH}^\bullet(A)$ is a derived invariant. In this talk, I will explain results on the calculation of the Hochschild cohomology group of q-Schur algebras. We calculate the Hochschild cohomology of a certain algebra. This follows from a certain derived equivalence.