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TÓM TẮT:

Let (R, \mathfrak{m}) be a Noetherian local ring and I an ideal of R . Let M be a finitely generated R -module with $\dim M = d$. It is clear by Matlis duality that if R is complete then $H^d_I(M)$ satisfies the following property: $\text{Ann}_R(0 :_{H^d_I(M)} \mathfrak{p}) = \mathfrak{p}$ for all prime ideals \mathfrak{p} containing $\text{Ann}_R H^d_I(M)$. However, $H^d_I(M)$ does not satisfy this property in general. In this paper we characterize this property of $H^d_I(M)$ in order to study the catenarity of the ring $R/\text{Ann}_R H^d_I(M)$, the set of attached primes of $H^d_I(M)$, the co-support of $H^d_I(M)$, and the multiplicity of $H^d_I(M)$. We also show that if $H^d_I(M)$ satisfies this property then $H^d_I(M)$ is isomorphic to some top local cohomology module with respect to the maximal ideal.