A link between RNA interference and nonsense-mediated decay in Caenorhabditis elegans

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Double-stranded RNA (dsRNA) inhibits expression of homologous genes by a process involving messenger RNA degradation. To gain insight into the mechanism of degradation, we examined how RNA interference is affected by mutations in the smg genes, which are required for nonsense-mediated decay. For three of six smg genes tested, mutations resulted in animals that were initially silenced by dsRNA but then recovered; wild-type animals remained silenced. The levels of target messenger RNAs were restored during recovery, and RNA editing and degradation of the dsRNA were identical to those of the wild type. We suggest that persistence of RNA interference relies on a subset of smg genes.
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