About allantoin degradation The allantoin degradation pathway, which converts allantoin to ammonia and carbon dioxide, allows S. cerevisiae to use allantoin as a sole nitrogen source. Conversion of allantoin to ammonia is carried out by the DAL1, DAL2, and DAL3 gene products, which work sequentially to generate urea. Urea is then degraded to ammonia in a two-step process by the DUR1,2 protein, a multifunctional single enzyme originally thought to be encoded by two tightly-linked genes. The allantoin catabolic pathway genes are regulated by a general signal that responds to the availability of readily utilizable nitrogen sources, and also by pathway-specific induction by allantoin or the intermediate allophanate. These regulatory effects are mediated by cis-acting DNA elements and the trans-acting factors Gln3p, Gat1p, Dal80p, Dal81p, and Dal82p.