

## **RNA ligase (ATP)**

Cat. No. EXWM-5822 Lot. No. (See product label)

Introduction	
Description	The enzyme catalyses the ligation of RNA strands with 3'-hydroxyl and 5'- phosphate termini, forming a phosphodiester and sealing certain types of single- strand breaks in RNA. Catalysis occurs by a three-step mechanism, starting with the activation of the enzyme by ATP, forming a phosphoramide bond between adenylate and a lysine residue. The adenylate group is then transferred to the 5'- phosphate terminus of the substrate, forming the capped structure 5'-(5'- diphosphoadenosine)-[RNA]. Finally, the enzyme catalyses a nucleophilic attack of the 3'-OH terminus on the capped terminus, which results in formation of the phosphodiester bond and release of the adenylate.
Synonyms	polyribonucleotide synthase (ATP); RNA ligase; polyribonucleotide ligase; ribonucleic ligase; poly(ribonucleotide):poly(ribonucleotide) ligase (AMP-forming)
Product Information	
Form	Liquid or lyophilized powder
EC Number	EC 6.5.1.3
CAS No.	37353-39-2
Reaction	ATP + (ribonucleotide)n-3'-hydroxyl + 5'-phospho-(ribonucleotide)m = (ribonucleotide)n+m + AMP + diphosphate (overall reaction); (1a) ATP + [RNA ligase]-L-lysine = [RNA ligase]-N6-(5'-adenylyl)-L-lysine + diphosphate; (1b) [RNA ligase]-N6-(5'-adenylyl)-L-lysine + 5'-phospho-(ribonucleotide)m = 5'-(5'- diphosphoadenosine)-(ribonucleotide)m + [RNA ligase]-L-lysine; (1c) (ribonucleotide)n-3'-hydroxyl + 5'-(5'-diphosphoadenosine)-(ribonucleotide)m = (ribonucleotide)n+m + AMP
Notes	This item requires custom production and lead time is between 5-9 weeks. We can custom produce according to your specifications.
Storage and Shipping Information	

Storage

Store it at +4 °C for short term. For long term storage, store it at -20 °C $\sim$ -80 °C.